SUPPLEMENT TO
NASA Contractor Report 178407

COCKPIT DATA MANAGEMENT

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CONTRACT NAS1-18027
February 1988

ORIGINAL CONTAINS
COLOR ILLUSTRATIONS

NASA
National Aeronautics and
Space Administration

Langley Research Center
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APPENDIX A

SCENARIO COMMUNICATION EVENTS AND DATA LINK IDU PAGES

APPENDIX A

This appendix defines the chronological sequence of communication related events in each TLA scenario, along with the data link IDU page formats utilized. The scenario time in seconds designating the specific events in each scenario can be utilized to locate the corresponding crew procedures and tasks in Appendix B, which is also referenced to scenario time.

This appendix is presented in three separate sections representing the normal ILS approach, the ILS approach with weather deviation, and the ILS missed approach with a reroute.

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A.1 NORMAL ILS APPROACH

Table A-1 defines the chronological sequence of normal ILS approach scenario events. The events apply to both VHF voice and data link scenarios. Figures A-1 through A-18 illustrate the data link IDU page formats which correspond to the Table A-1 events. The pages are in chronological sequence, with a pointer indicating pilot-selected options on each page.

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Table A-1. Normal ILS Approach

SCENARIO TIME (SECONDS)	COMMUNICATION EVENT
200.4	VECTOR TO DOWNWIND
375.4	DESCENT CLEARANCE
450.0	ETIS REQUEST
464.0	ETIS REPORT FOR ATL
525.4	VECTOR TO BASE
575.4	ILS APPROACH CLEARANCE
675.4	LANDING CLEARANCE
987.4	HANDOFF TO GROUND CONTROL
1014.4	TAXI INSTRUCTIONS

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```
         MODE-S DATA LINK MENU

▷<ATC UPLINKS       FLT PLAN>
  PENDING           CHANGE
 <REQUEST FOR        UPLINKS>
  CLEARANCE         RECEIVED
 <WEATHER
  REQUESTS
 <ETIS
  REQUESTS
 <PIREPS          CONFIGURE>
                     SYSTEM
                     RETURN>
```

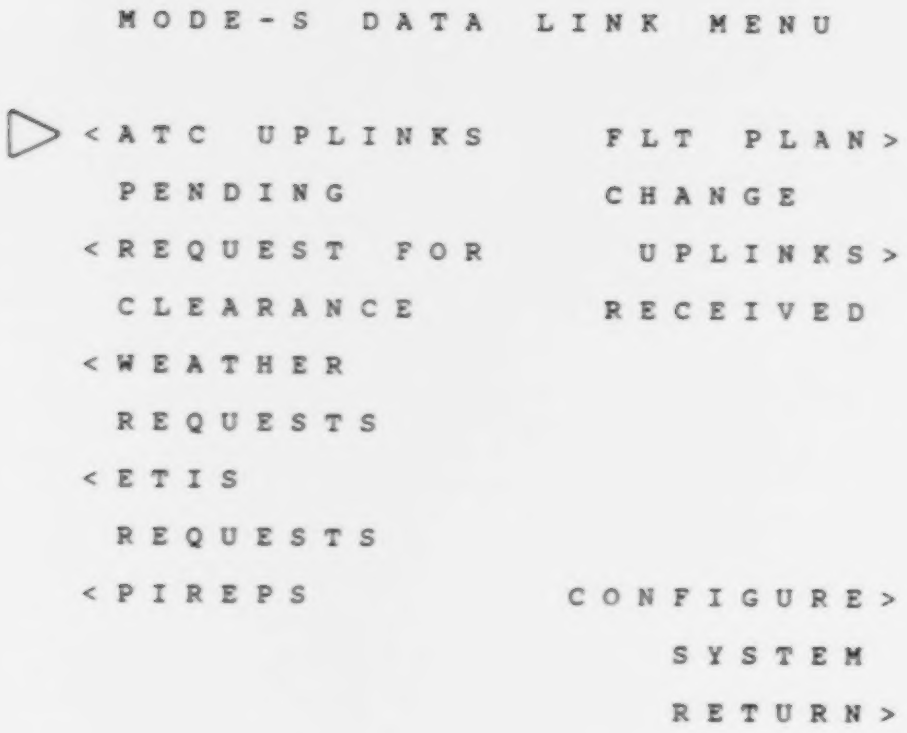
Figure A-1

ATC UPLINK NO. 1

TURN RIGHT HEADING
270, DESCEND AND
MAINTAIN 6000 MSL.
MONITOR ATL APPROACH
ON 127.25 MHZ.
-END OF MESSAGE-

<UNABLE WILCO> ◁

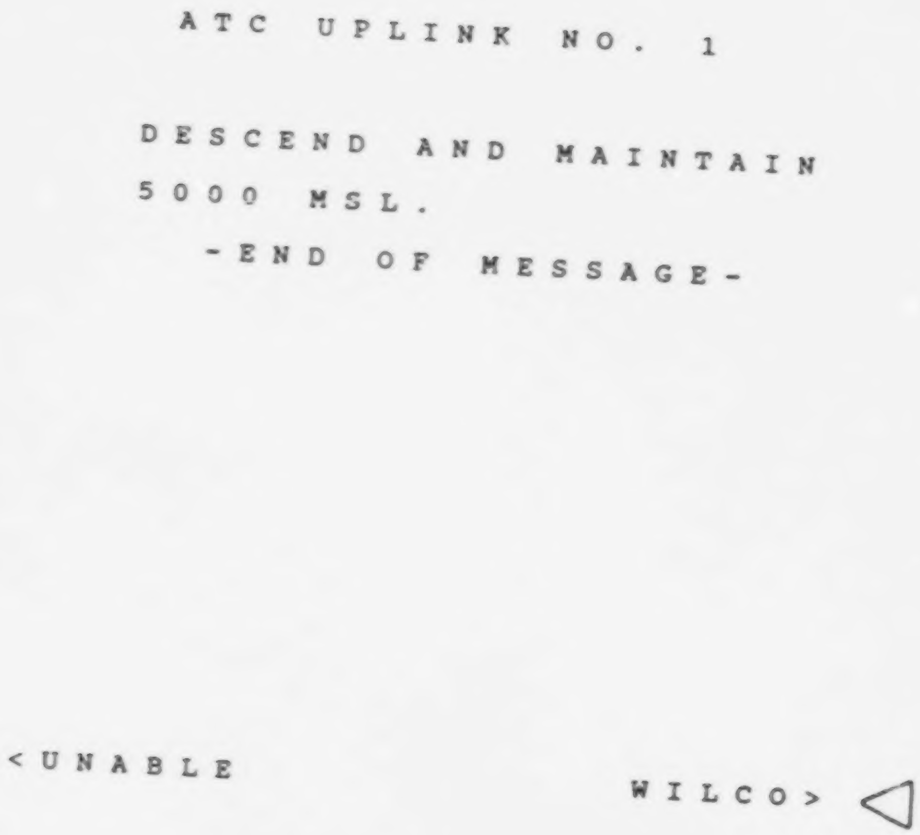
Figure A-2



```
      MODE-S DATA LINK MENU

<ATC UPLINKS       FLT PLAN>
 PENDING           CHANGE
<REQUEST FOR        UPLINKS>
 CLEARANCE         RECEIVED
<WEATHER
 REQUESTS
<ETIS
 REQUESTS
<PIREPS           CONFIGURE>
                     SYSTEM
                     RETURN>
```

Figure A-3



ATC UPLINK NO. 1

DESCEND AND MAINTAIN
5000 MSL.
-END OF MESSAGE-

<UNABLE
WILCO> ◁

Figure A-4

```
   MODE-S DATA LINK MENU

  <ATC UPLINKS     FLT PLAN>
   PENDING         CHANGE
  <REQUEST FOR      UPLINKS>
   CLEARANCE       RECEIVED
  <WEATHER
   REQUESTS
▷ <ETIS
   REQUESTS
  <PIREPS         CONFIGURE>
                     SYSTEM
                     RETURN>
```

Figure A-5

ETIS REQUEST FOR KATL

▷ <FULL REPORT UPDATE>

A B C D E F G

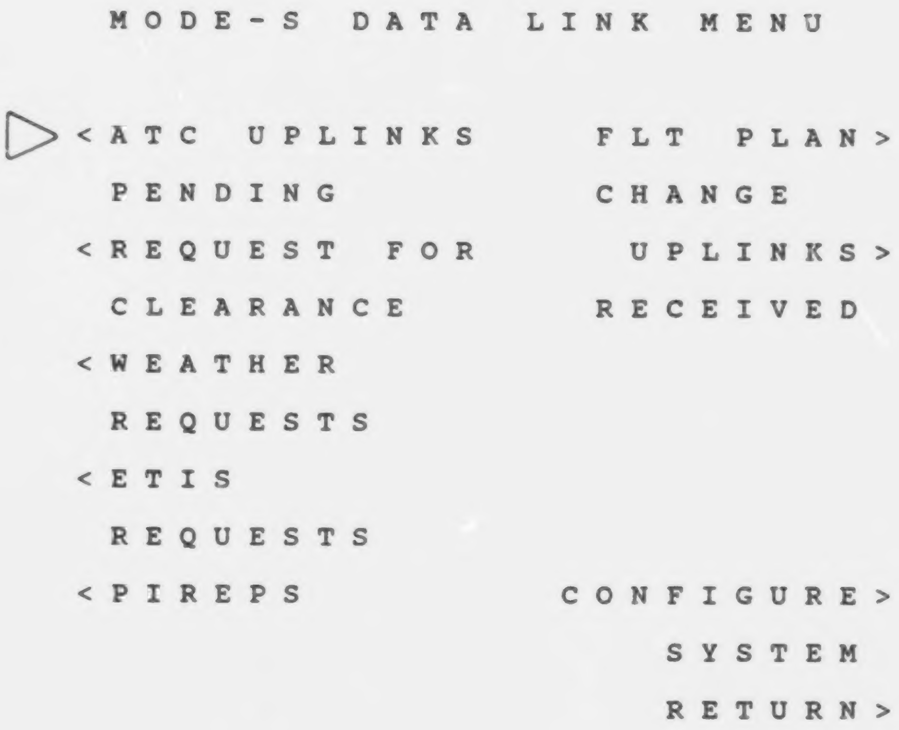
H I J K L M N

O P Q R S T U

V W X Y Z

BKSP CLR ENT

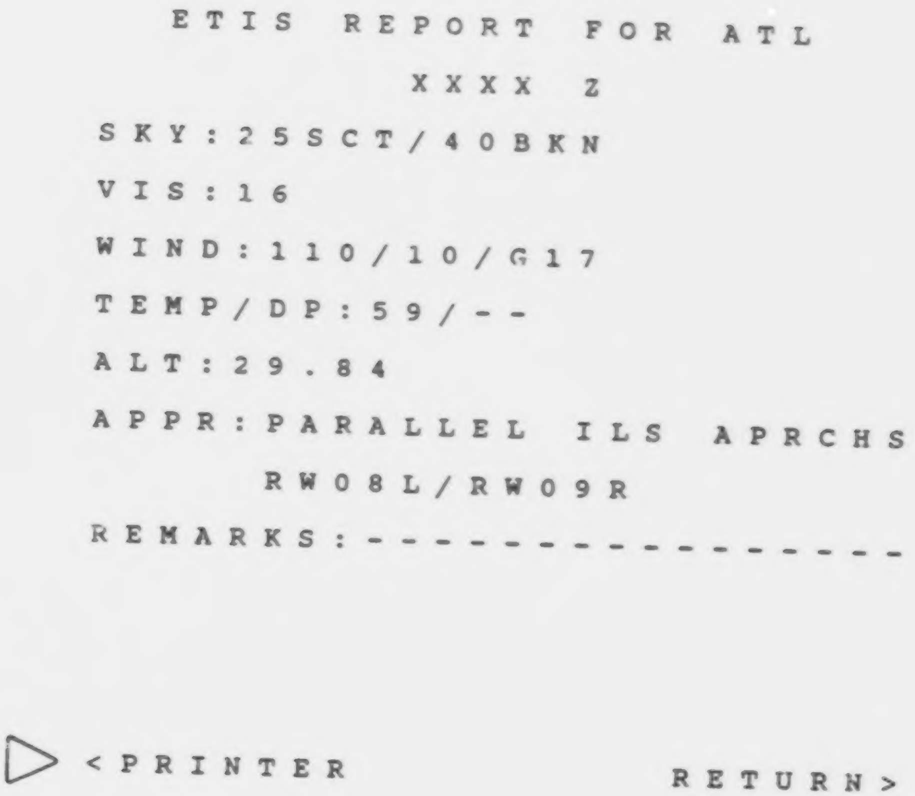
Figure A-6



```
   MODE-S DATA LINK MENU

▷<ATC UPLINKS     FLT PLAN>
  PENDING         CHANGE
 <REQUEST FOR      UPLINKS>
  CLEARANCE       RECEIVED
 <WEATHER
  REQUESTS
 <ETIS
  REQUESTS
 <PIREPS         CONFIGURE>
                    SYSTEM
                    RETURN>
```

Figure A-7



```
     ETIS REPORT FOR ATL
            XXXX Z
SKY:25SCT/40BKN
VIS:16
WIND:110/10/G17
TEMP/DP:59/--
ALT:29.84
APPR:PARALLEL ILS APRCHS
     RW08L/RW09R
REMARKS:----------------

▷ <PRINTER              RETURN>
```

Figure A-8

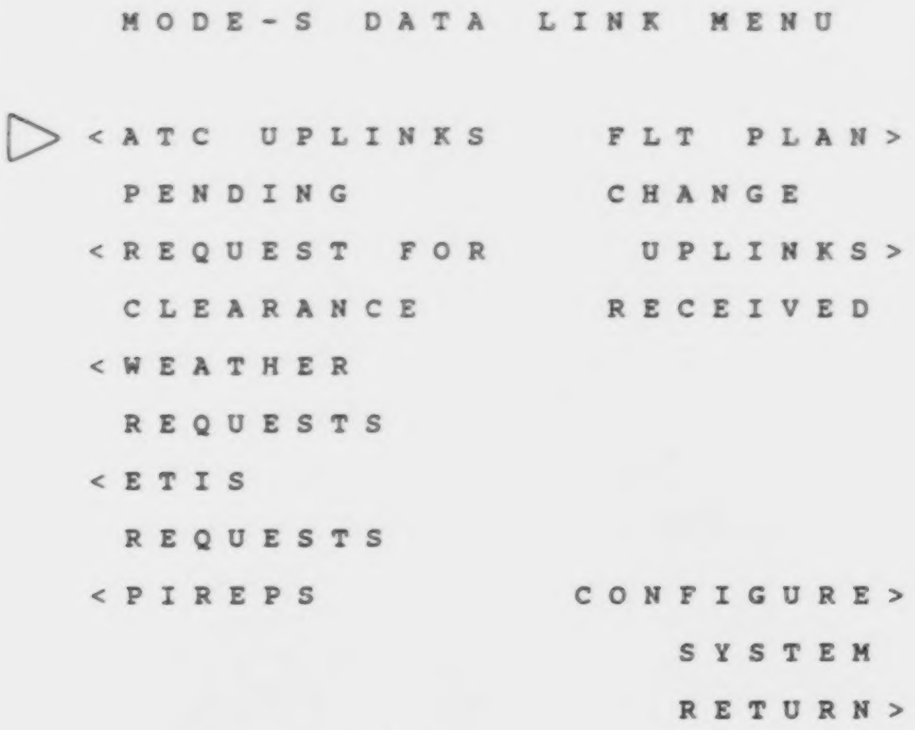
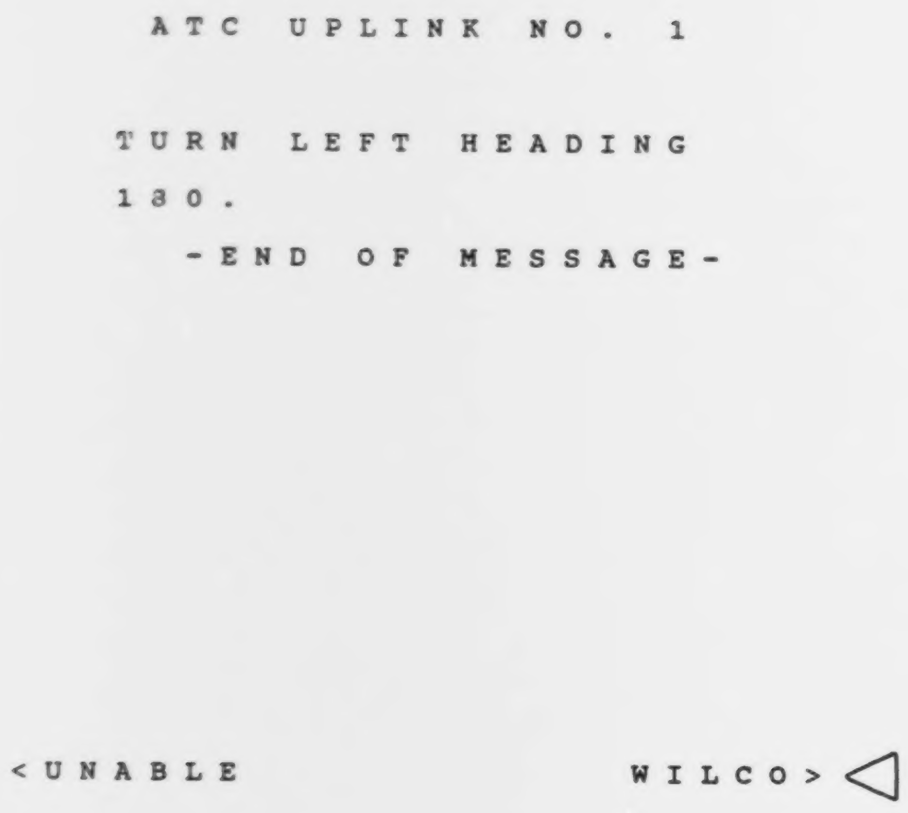

MODE-S DATA LINK MENU
<ATC UPLINKS
PENDING
FLT PLAN>
CHANGE
<REQUEST FOR
CLEARANCE
UPLINKS>
RECEIVED
<WEATHER
REQUESTS
<ETIS
REQUESTS
<PIREPS
CONFIGURE>
SYSTEM
RETURN>

Figure A-9



ATC UPLINK NO. 1

TURN LEFT HEADING
180.
-END OF MESSAGE-

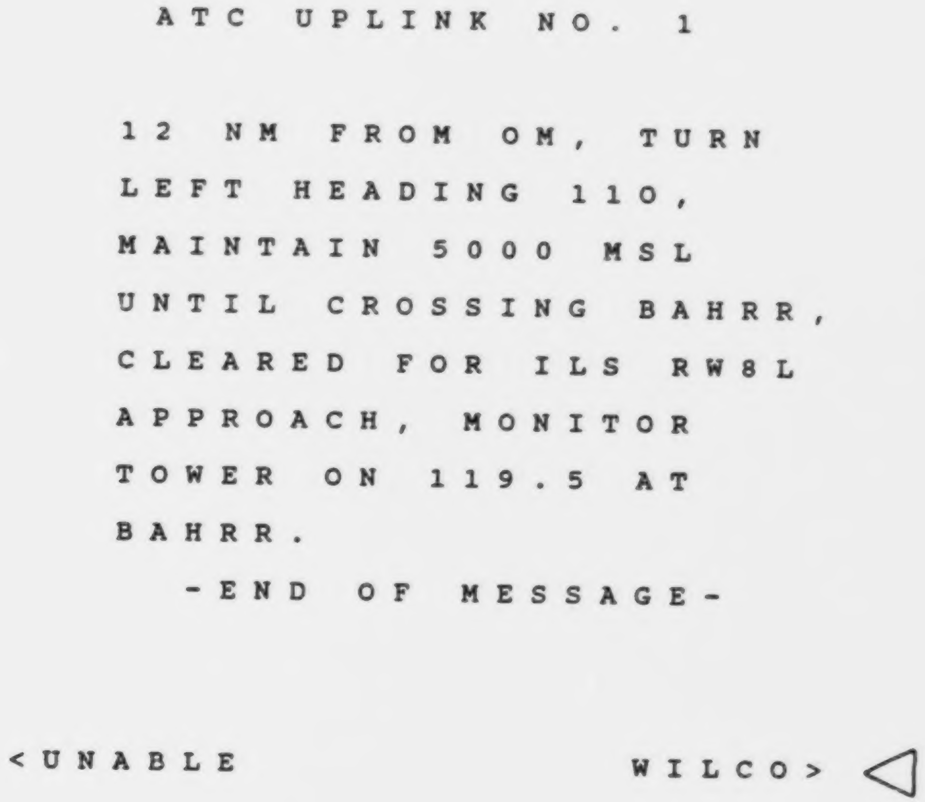
<UNABLE WILCO>

Figure A-10

```
      MODE-S DATA LINK MENU

▷<ATC UPLINKS        FLT PLAN>
  PENDING            CHANGE
 <REQUEST FOR         UPLINKS>
  CLEARANCE          RECEIVED
 <WEATHER
  REQUESTS
 <ETIS
  REQUESTS
 <PIREPS           CONFIGURE>
                      SYSTEM
                      RETURN>
```

Figure A-11

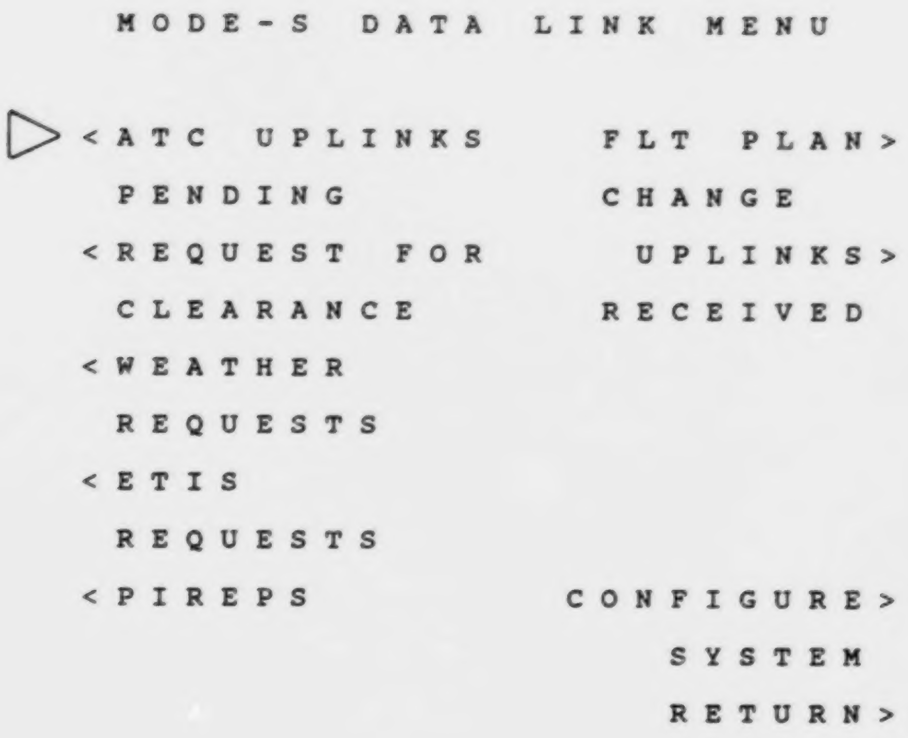


ATC UPLINK NO. 1

12 NM FROM OM, TURN
LEFT HEADING 110,
MAINTAIN 5000 MSL
UNTIL CROSSING BAHRR,
CLEARED FOR ILS RW8L
APPROACH, MONITOR
TOWER ON 119.5 AT
BAHRR.
-END OF MESSAGE-

<UNABLE WILCO> ◁

Figure A-12



```
     MODE-S DATA LINK MENU

   <ATC UPLINKS    FLT PLAN>
    PENDING        CHANGE
   <REQUEST FOR     UPLINKS>
    CLEARANCE      RECEIVED
   <WEATHER
    REQUESTS
   <ETIS
    REQUESTS
   <PIREPS        CONFIGURE>
                     SYSTEM
                     RETURN>
```

Figure A-13

ATC UPLINK NO. 1

NUMBER 3 FOR RW8L,
DC-9 3 NM AHEAD. WIND
110 AT 9, CLEARED TO
LAND RW8L.
-END OF MESSAGE-

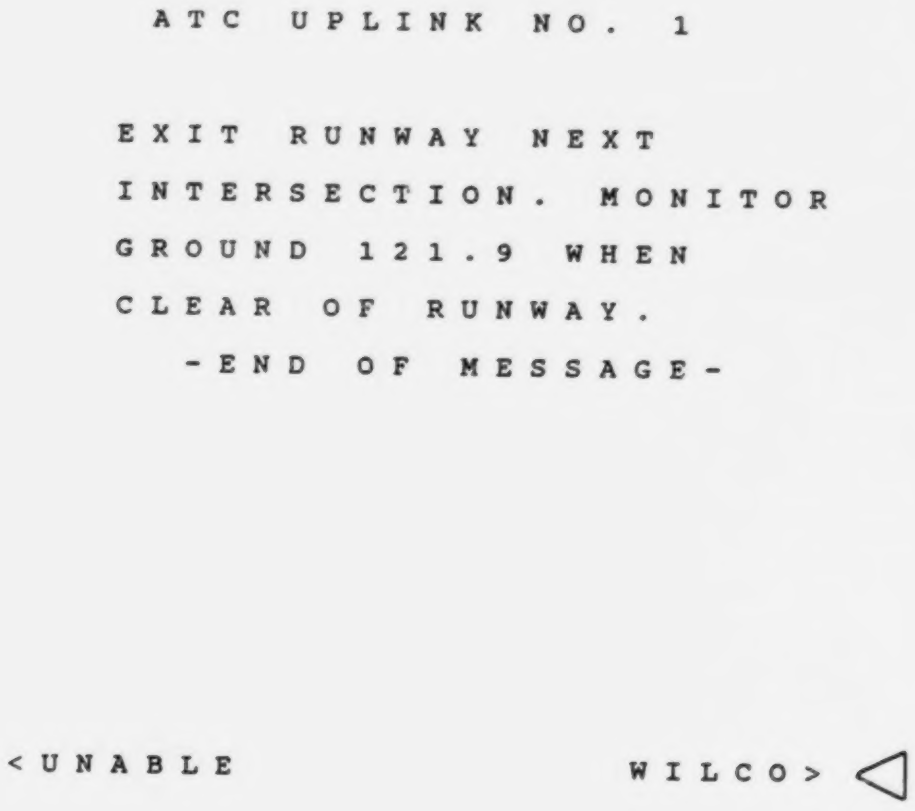
<UNABLE WILCO> ◁

Figure A-14

```
    MODE-S DATA LINK MENU

▷<ATC UPLINKS         FLT PLAN>
  PENDING             CHANGE
 <REQUEST FOR          UPLINKS>
  CLEARANCE           RECEIVED
 <WEATHER
  REQUESTS
 <ETIS
  REQUESTS
 <PIREPS             CONFIGURE>
                        SYSTEM
                        RETURN>
```

Figure A-15



ATC UPLINK NO. 1

EXIT RUNWAY NEXT
INTERSECTION. MONITOR
GROUND 121.9 WHEN
CLEAR OF RUNWAY.
-END OF MESSAGE-

<UNABLE WILCO>

Figure A-16

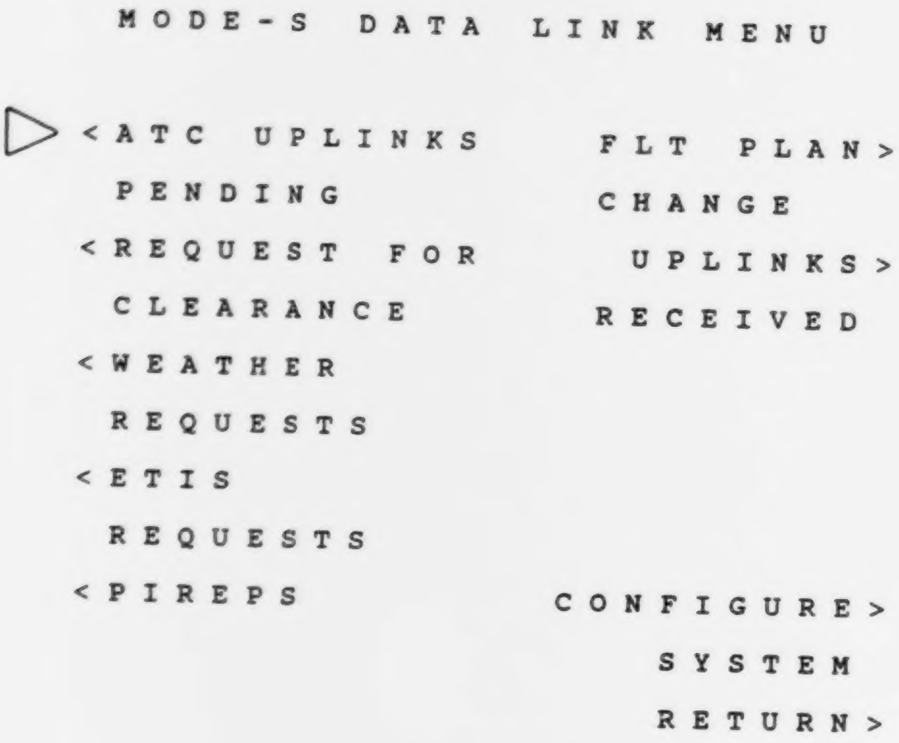

MODE-S DATA LINK MENU
<ATC UPLINKS
PENDING
<REQUEST FOR
CLEARANCE
<WEATHER
REQUESTS
<ETIS
REQUESTS
<PIREPS
FLT PLAN>
CHANGE
UPLINKS>
RECEIVED
CONFIGURE>
SYSTEM
RETURN>

Figure A-17

ATC UPLINK NO. 1

TAXI TO RAMP VIA
NE/SW TAXIWAY.
-END OF MESSAGE-

<UNABLE WILCO> ◁

Figure A-18

A.2 ILS APPROACH WITH WEATHER DEVIATION

Table A-2 and Figures A-19 through A-29 illustrate the sequence of events and page formats for those portions of the weather deviation scenarios that differ from the normal ILS scenarios.

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Table A-2. Weather Deviation

SCENARIO TIME (SECONDS)	COMMUNICATION EVENT
200.4	VECTOR TO DOWNWIND
21[illegible]	REQUEST FOR DIFFERENT HEADING
231.0	VECTOR FOR NEW HEADING
371.0	ADVISING CLEAR OF WEATHER
384.0	VECTOR TO RESUME ON COURSE

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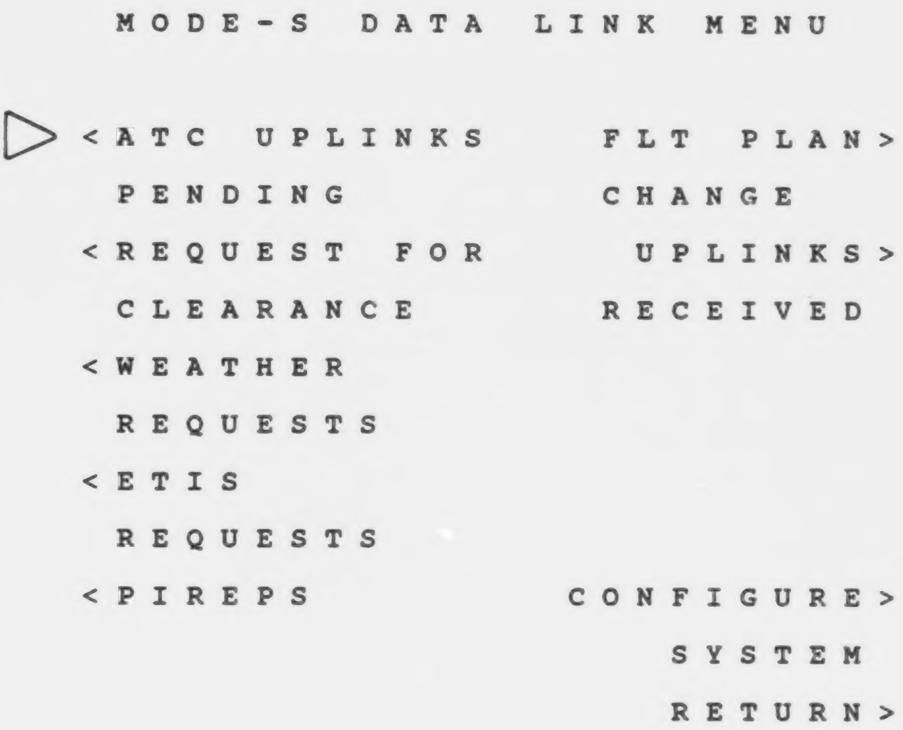
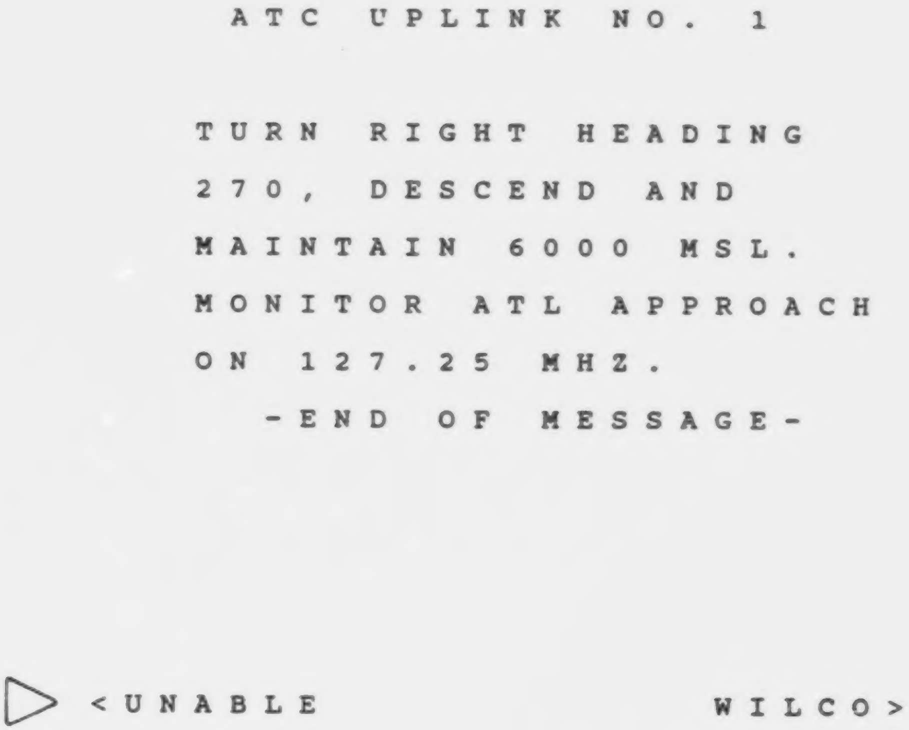


```
    MODE-S DATA LINK MENU

▷ <ATC UPLINKS     FLT PLAN>
    PENDING        CHANGE
  <REQUEST FOR      UPLINKS>
    CLEARANCE      RECEIVED
  <WEATHER
    REQUESTS
  <ETIS
    REQUESTS
  <PIREPS         CONFIGURE>
                     SYSTEM
                     RETURN>
```

Figure A-19



ATC UPLINK NO. 1

TURN RIGHT HEADING
270, DESCEND AND
MAINTAIN 6000 MSL.
MONITOR ATL APPROACH
ON 127.25 MHZ.
-END OF MESSAGE-

▷ <UNABLE WILCO>

Figure A-20

```
       UNABLE TO COMPLY
           DUE TO:
▷ <UNSAFE WX CONDX-STRONG
   RADAR ECHOES NEARBY
  <UNSAFE WX CONDX-SEVERE
   ICING THAT LOCATION
  <REQUIRED PERFORMANCE
   NOT AVAILABLE
  <CLEARANCE NOT
   CONSISTENT-VERIFY
```

Figure A-21

```
     REQUEST FOR CLEARANCE

 <PUSHBACK       KEEP CURRENT>
                 CLEARANCE
 <REQUEST      MODIFY FLIGHT>
  FOR TAXI     PLAN ROUTE
 <INITIAL      MAKING MISSED>
  ROUTING            APPROACH
 <ALTITUDE          FREE TEXT>
  REQUEST
▷<HEADING       RESUME ORIG->
  REQUEST       INAL ROUTE
 <SPEED REQUEST       RETURN>
```

Figure A-22

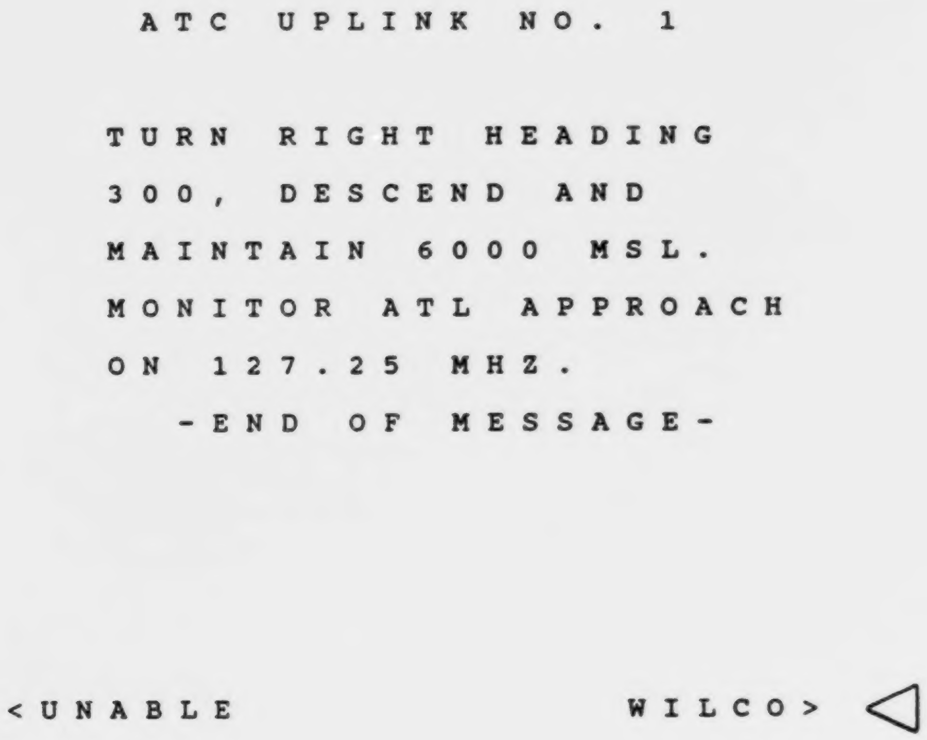
REQUEST FOR
NEW HEADING
<REQUEST TO FLY
HEADING XXX 1 2 3
▷ <REQUEST TEMP
HEADING 300 4 5 6
-WILL ADVISE-
7 8 9
0
BKSP
CLR ENT

Figure A-23

```
       MODE-S DATA LINK MENU

▷ <ATC UPLINKS         FLT PLAN>
    PENDING            CHANGE
  <REQUEST FOR           UPLINKS>
    CLEARANCE          RECEIVED
  <WEATHER
    REQUESTS
  <ETIS
    REQUESTS
  <PIREPS            CONFIGURE>
                        SYSTEM
                        RETURN>
```

Figure A-24

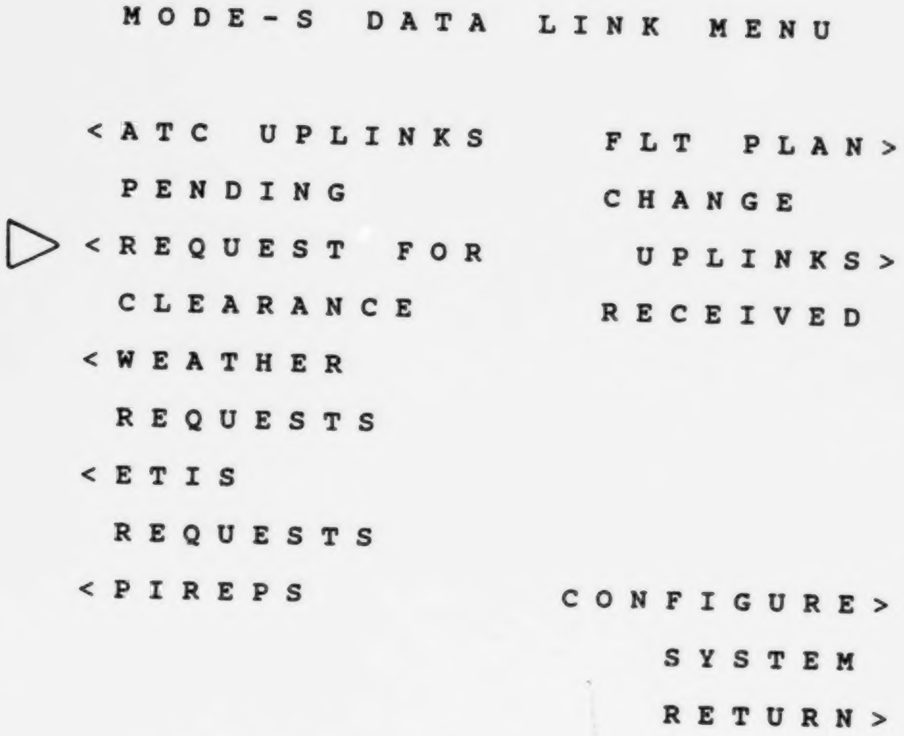


ATC UPLINK NO. 1

TURN RIGHT HEADING
300, DESCEND AND
MAINTAIN 6000 MSL.
MONITOR ATL APPROACH
ON 127.25 MHZ.
-END OF MESSAGE-

<UNABLE WILCO> ◁

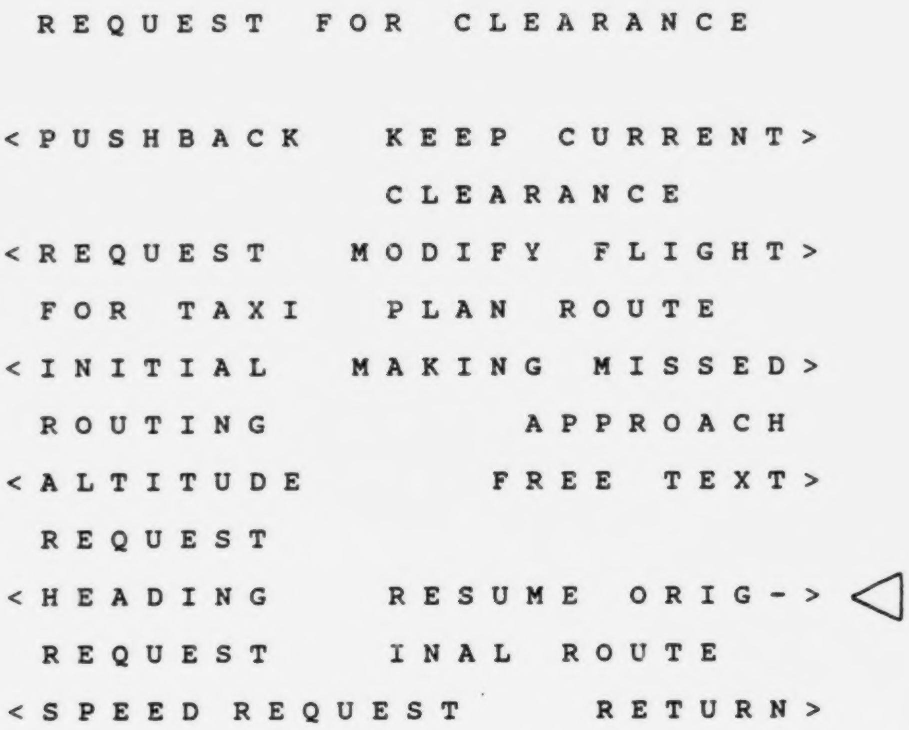
Figure A-25



```
          MODE-S DATA LINK MENU

     <ATC UPLINKS        FLT PLAN>
      PENDING            CHANGE
 ▷   <REQUEST FOR          UPLINKS>
      CLEARANCE          RECEIVED
     <WEATHER
      REQUESTS
     <ETIS
      REQUESTS
     <PIREPS            CONFIGURE>
                            SYSTEM
                            RETURN>
```

Figure A-26



```
    REQUEST FOR CLEARANCE

<PUSHBACK    KEEP CURRENT>
               CLEARANCE
<REQUEST    MODIFY FLIGHT>
 FOR TAXI     PLAN ROUTE
<INITIAL   MAKING MISSED>
 ROUTING        APPROACH
<ALTITUDE      FREE TEXT>
 REQUEST
<HEADING    RESUME ORIG->  ◁
 REQUEST     INAL ROUTE
<SPEED REQUEST    RETURN>
```

Figure A-27

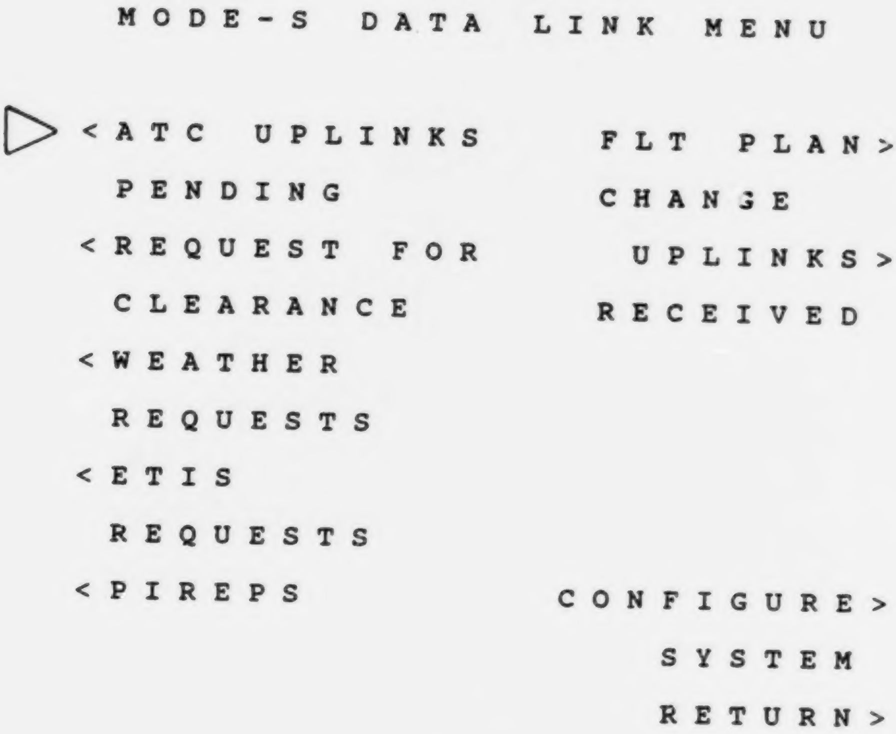

MODE-S DATA LINK MENU
▷ <ATC UPLINKS
PENDING
<REQUEST FOR
CLEARANCE
<WEATHER
REQUESTS
<ETIS
REQUESTS
<PIREPS
FLT PLAN>
CHANGE
UPLINKS>
RECEIVED
CONFIGURE>
SYSTEM
RETURN>

Figure A-28

ATC UPLINK NO. 1

TURN LEFT HEADING 240
DESCEND AND MAINTAIN
5000 MSL.
-END OF MESSAGE-

<UNABLE WILCO> ◁

Figure A-29

A.3 ILS MISSED APPROACH WITH REROUTE

Table A-3 and Figures A-30 through A-36 illustrate the sequence of events and page formats for those portions of the missed approach scenarios that differ from the normal ILS scenarios.

Table A-3. ILS Missed Approach With Reroute

SCENARIO TIME (SECONDS)	COMMUNICATION EVENT
870.4	ATC ADVISES PILOT REPORTED WIND SHEAR
882.0	ADVISES MISSED APPROACH AND REQUESTS HOLDING
928.0	ROUTE CLEARANCE TO HOLDING FIX

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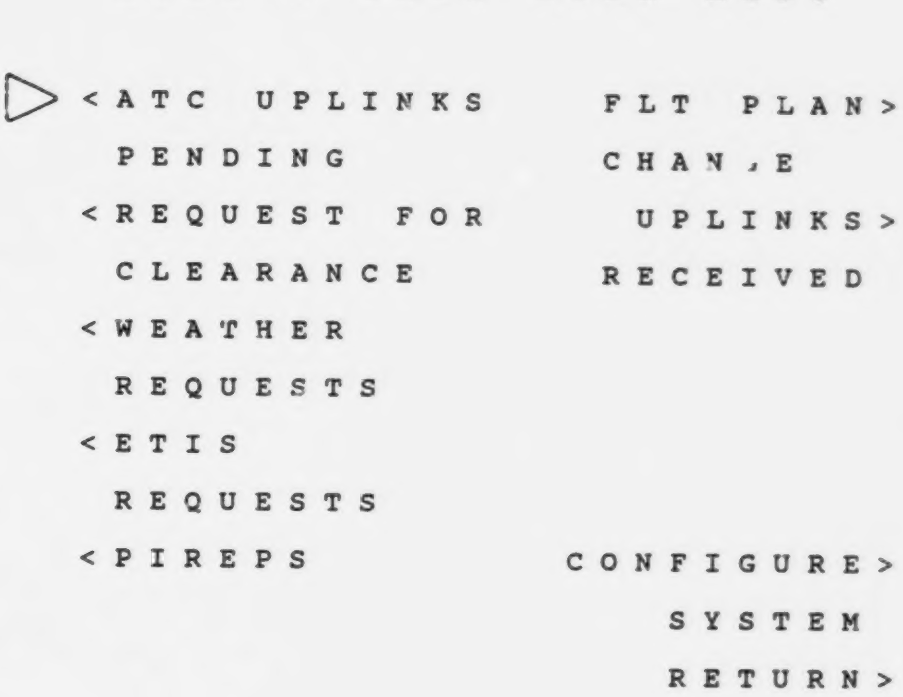

MODE-S DATA LINK MENU
<ATC UPLINKS
PENDING
FLT PLAN>
CHANGE
<REQUEST FOR
CLEARANCE
UPLINKS>
RECEIVED
<WEATHER
REQUESTS
<ETIS
REQUESTS
<PIREPS
CONFIGURE>
SYSTEM
RETURN>

Figure A-30

ATC UPLINK NO. 1

XXXX Z, DC-9 REPORTS
ABRUPT WIND SHEAR AT
1500 MSL, ON FINAL
RW8L, MAX THRUST
REQUIRED.
-END OF MESSAGE-

▷ <ACKNOWLEDGE

Figure A-31

```
   MODE-S DATA LINK MENU

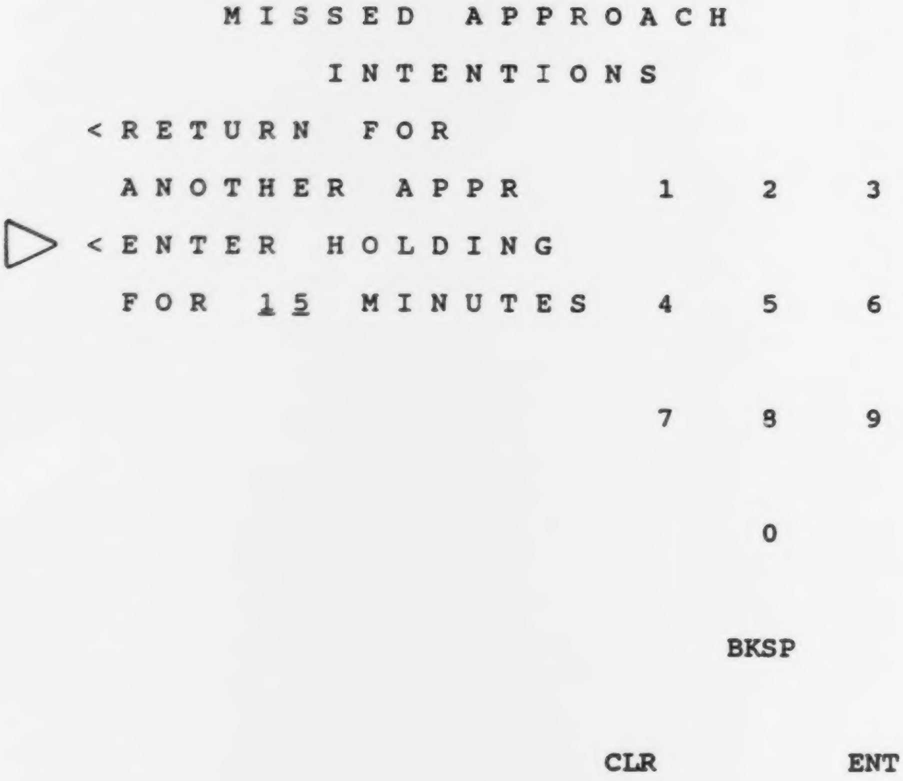
  <ATC UPLINKS       FLT PLAN>
   PENDING           CHANGE
▷ <REQUEST FOR        UPLINKS>
   CLEARANCE         RECEIVED
  <WEATHER
   REQUESTS
  <ETIS
   REQUESTS
  <PIREPS           CONFIGURE>
                       SYSTEM
                       RETURN>
```

Figure A-32

```
     REQUEST FOR CLEARANCE

<PUSHBACK      KEEP CURRENT>
               CLEARANCE
<REQUEST      MODIFY FLIGHT>
 FOR TAXI      PLAN ROUTE
<INITIAL     MAKING MISSED> ◁
 ROUTING           APPROACH
<ALTITUDE         FREE TEXT>
 REQUEST
<HEADING       RESUME ORIG->
 REQUEST       INAL ROUTE
<SPEED REQUEST       RETURN>
```

Figure A-33



```
          MISSED APPROACH
             INTENTIONS
    <RETURN FOR
     ANOTHER APPR        1   2   3
 ▷  <ENTER HOLDING
     FOR 15 MINUTES      4   5   6

                         7   8   9

                             0

                            BKSP

                       CLR          ENT
```

Figure A-34

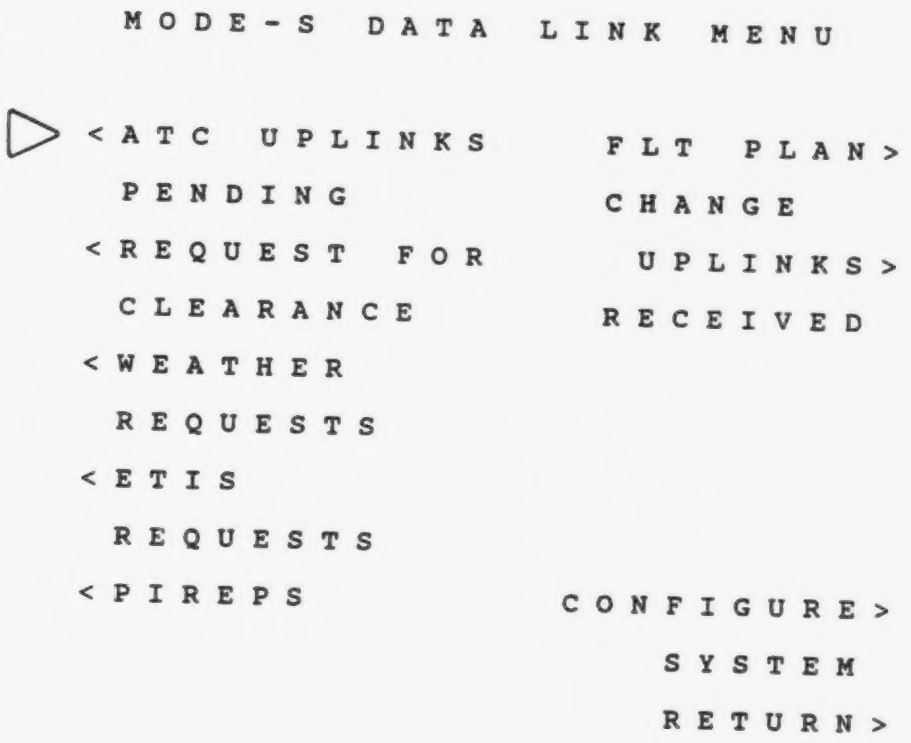

MODE-S DATA LINK MENU
<ATC UPLINKS
PENDING
FLT PLAN>
CHANGE
<REQUEST FOR
CLEARANCE
UPLINKS>
RECEIVED
<WEATHER
REQUESTS
<ETIS
REQUESTS
<PIREPS
CONFIGURE>
SYSTEM
RETURN>

Figure A-35

ATC UPLINK NO. 1

CLEARED TO MACEY INTERSECTION VIA AHN R-322/10DME FIX DIRECT MACEY. CLIMB AND MAINTAIN FL180. HOLD N.E. OF MACEY AS PUBLISHED. EXPECT FURTHER CLEARANCE XXXX ZULU.

-END OF MESSAGE-

<UNABLE WILCO> ◁

Figure A-36

APPENDIX B

DETAILED MISSION SCENARIOS

APPENDIX B

This appendix presents the detailed crew procedures and tasks representing the scenarios which were analyzed in this study. Time in seconds is referenced to the beginning of the scenario, as in Appendix A. Both pilot and copilot tasking is presented, first for the conventional flight deck and then for the advanced flight deck. The VHF voice tasking is presented first, followed by the data link tasking for each crew member.

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B.1 NORMAL ILS APPROACH—CONVENTIONAL FLIGHT DECK

Flying Pilot

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OF POOR QUALITY

```
****************                    ******************************************
* UNSHIFTED    *                    *                                        *            NOV18 1986
****************                    *        MISSION SCENARIO REPORT         *
                                    *                                        *
                                    * MISSION - CURRENT NAS                  *
                                    *           ILS AP-BASE LN.              *
                                    *                                        *
                                    * CONFIGURATION - 737 CONVNT FLT DCK      *
                                    *                                        *
                                    * CREWMEMBER - PILOT                     *
                                    *                                        *
                                    ******************************************

          TIME INTERVAL (SECS)          TOTAL                                     FLIGHT PHASE
          SINCE MISSION START           ACTIVITY                                      EVENT/PROCEDURE
          BEGINNING       END           TIME                                              TASK

            0.00                                                                  18BL BASELINE FFD ILS APP

            0.00                                                                      18BL01   CROSS LOGEN INTERSEC
                                                                                               TION AT 250 KCAS AND
                                                                                               14000 FEET.ATL CENTR
                                                                                               HAS PREVIOUSLY INSTR
                                                                                               UCTED NASA 515 TO
                                                                                               CONTACT ATL APPR AT
                                                                                               LOGEN.VHF-2R HAS AL-
                                                                                               READY BEEN TUNED TO
                                                                                               CORRECT FREQ-126.9.

            0.00                                                                      180090   CONTACT ATL APPROACH
                                                                                               ON 126.9

            9.40          13.40              4.00                                        1P16YY90  NASA 515,ATL APPR,
                                                                                                   ROGER.

            0.00                                                                      140003   ALTITUDE CHANGE PROC

            0.00          10.00             10.00                                        4A    29   ACT FLT CONTROL TO
                                                                                                   CHANGE ALT

            0.00          10.00             10.00                                        3L    02   MON VERTICAL SPEED
                                                                                                   INDIC

            0.00           0.77              0.77                                        3H    02   MON CORR BARO ALT
                                                                                                   INDIC

            0.00          10.00             10.00                                        3R    10   MON PITCH ATTITUDE
                                                                                                   INDIC ON FDI

            0.00           2.02              2.02                                        4B    05   ACTUATE BOTH
                                                                                                   THROTTLES

            0.00           2.37              2.37                                        3F    01   MON MACH NO INDIC


           10.00                                                                      000039   FLIGHT INSTRUMENT
                                                                                               SCAN - F

           10.00         130.00            120.00                                        3R    57   MON PITCH ATTITUDE
                                                                                                   INDIC ON FDI

           10.00         130.00            120.00                                        3L    03   MON VERTICAL SPEED
                                                                                                   INDIC

           10.00         130.00            120.00                                        3A    11   MONITOR AIRSPEED
                                                                                                   INDIC

           10.00         130.00            120.00                                        3S    15   MONITOR A/C HEADING
                                                                                                   RELATIVE TO SELECTED
                                                                                                   HEADING ON CI

           15.00                                                                      180013   SET NAV-1 TO RUNWAY
                                                                                               8L ILS -109.3

           31.50          34.00              2.50                                        1P    12   MONITOR CALL-OUT
           34.00          36.25              2.25                                        5G    04   MON VOR POINTER NO.1
                                                                                                   ON VOR/RMI 1 INDIC
           15.00                                                                      00EV30   PILOT EXT VIS SCAN
           15.00          65.00             50.00                                        8A    12     PILOT EXTERNAL
                                                                                                   VISION SCAN
           38.00                                                                      180039   SET ADF-1 TO CATTA
                                                                                                   -375KC
           45.73          47.23              1.50                                        1P    02   MONITOR CALL-OUT
           49.00                                                                      180040   SET ADF-2 TO FLANC
                                                                                                   -344
           54.00          55.50              1.50                                        1P    02   MONITOR CALL-OUT
           58.00                                                                      180038   SET DECISION HEIGTH
                                                                                               ON RADIO ALTIMETER
           64.00                                                                      030007   ENGINE INSTRUMENT
                                                                                               SCAN
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SINCE MISSION START BEGINNING	END	ACTIVITY TIME	EVENT/PROCEDURE TASK	
65.00			16AA01	ADJUST THRUST AND PITCH TO MAINTAIN A 900 FPM DESCENT AT 250 KCAS USING PITCH CWS MODE OF A.P. PILOT HAS DETERMINED THAT THIS SHOULD PERMIT DECEL TO 210 FOR CROSSING BAHRR AT 6000 FT.
65.00	67.73	2.73	4B 07	MAKE MINOR THRUST ADJUSTMENT
65.00	70.00	5.00	4A 04	MANUALLY CONTROL A/C
70.00			160005	DESCENT AND APPROACH CHECKLIST - 1
70.00	72.00	2.00	1P160043	CALL OUT-[DESCENT AND APPROACH CHECK-LIST]
85.00	86.00	1.00	1P 10	MONITOR CALL-OUT
87.00	87.80	0.80	1P 07	MONITOR REPORT
90.00	91.80	1.80	1P 13	MONITOR CALL-OUT
98.00	98.40	0.40	1P 16	MONITOR REPORT
70.00			00EV33	PILOT EXT VIS SCAN
70.00	170.00	100.00	8A 13	PILOT EXTERNAL VISION SCAN
100.00			160006	DESCENT AND APPROACH CHFCKLIST - 2
102.00	102.90	0.90	1P 11	MONITOR CALL-OUT
103.00	106.54	3.54	7M 03	SET ENG NO.1 START SW TO FLT
106.54	108.28	1.74	7M 06	SET ENG NO.2 START SW TO FLT
108.50	109.00	0.50	1P160049	CALL OUT [FLIGHT]
111.00	112.10	1.10	1P 12	MONITOR CALL-OUT
114.20	114.50	0.30	1P 16	MONITOR REPORT
116.50	117.90	1.40	1P 12	MONITOR CALL-OUT
123.40	124.70	1.30	1P 09	MONITOR REPORT
128.00			160007	DESCENT AND APPROACH CHECKLIST - 3
128.00	129.50	1.50	1P 02	MONITOR CALL-OUT
146.00	147.90	1.90	1P 14	MONITOR CALL-OUT
148.00	150.57	2.57	3A 07	MON V-REF BUG SETTING
148.00	150.57	2.57	3A 05	SET V-REF BUG
151.00	154.00	3.00	3A 13	CAPT CHECK F.O.<S V-REF BUG SETTING
154.00	155.80	1.80	1P 08	MONITOR REPORT
157.60	158.90	1.30	1P 02	MONITOR CALL-OUT
130.00			090019	FLIGHT INSTRUMENT SCAN - D
130.00	190.00	60.00	3R 56	MON PITCH ATTITUDE INDIC ON FDI
130.00	190.00	60.00	3L 02	MON VERTICAL SPEED INDIC
130.00	190.00	60.00	3A 10	MONITOR AIRSPEED INDIC
130.00	190.00	60.00	3S 15	MONITOR A/C HEADING RELATIVE TO SELECTED HEADING ON CI
165.00			030007	ENGINE INSTRUMENT SCAN
180.00			00EV05	C/P EXT VIS SCAN
195.00			160048	MON ADF/RMI-2
195.00			160091	HANDOFF TO ATL FINAL APPROACH CONTROLLER
195.00	207.00	12.00	1P16XX61	N 515,TURN RT HDG270 DESCND AND MAINTAIN 6000 FT,CONTACT ATL APPR ON 127.25.
200.00			140007	HEADING CHANGE PROC.

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SINCE MISSION START        ACTIVITY                           EVENT/PROCEDURE
BEGINNING        END       TIME                                   TASK
200.00        210.00          10.00                                  3S    01   MONITOR A/C HEADING
                                                                              RELATIVE TO SELECTED
                                                                              HDG ON CI

200.00        210.00          10.00                                  4A    20   ACT FLT CONTROL TO
                                                                              CHANGE HDG

200.00        210.00          10.00                                  3L    02   MON VERTICAL SPEED
                                                                              INDIC

200.00        204.92           4.92                                  3S    11   SET COURSE DIGITS
                                                                              AND POINTER ON CI
                                                                              USING COURSE CURSOR
                                                                              CONT

205.00        215.00          10.00                                  3R    59   MON A/C ATTITUDE
                                                                              RELATIVE TO ROLL
                                                                              COMMAND ON
                                                                              FDI

200.00                                                            16BL02   BEGIN TURN TO DOWN-
                                                                           WIND LEG

210.00                                                            16BL03   DESCEND THRU 11000.

215.00                                                            16AA01   ADJUST THRUST AND
                                                                           PITCH TO MAINTAIN A
                                                                           900 FPM DESCENT AT
                                                                           250 KCAS USING PITCH
                                                                           CWS MODE OF A.P.
                                                                           PILOT HAS DETERMINED
                                                                           THAT THIS SHOULD
                                                                           PERMIT DECEL TO 210
                                                                           FOR CROSSING BAHRR
                                                                           AT 5000 FT.

215.00        217.73           2.73                                  4B    07   MAKE MINOR THRUST
                                                                              ADJUSTMENT

215.00        220.00           5.00                                  4A    64   MANUALLY CONTROL A/C

219.00                                                            160002   TUNE ATL APPROACH
                                                                           ON 127.25

220.00                                                            160003   CONTACT ATL APPROACH
                                                                           ON 127.25

231.90        235.90           4.00                                  1P16YY90   NASA 515,ATL APPR,
                                                                              ROGER.

220.00                                                            000017   FLIGHT INSTRUMENT
                                                                           SCAN - C

220.00        250.00          30.00                                  3R    56   MON PITCH ATT:TUDE
                                                                              INDIC ON FDI

220.00        250.00          30.00                                  3L    02   MON VERTICAL SPEED
                                                                              INDIC

220.00        250.00          30.00                                  3A    10   MONITOR AIRSPEED
                                                                              INDIC

220.00        250.00          30.00                                  3S    01   MONITOR A/C HEADING
                                                                              RELATIVE TO SELECTED
                                                                              HDG ON CI

240.00                                                            00EV09   C/P EXT VIS SCAN

250.00                                                            000039   FLIGHT INSTRUMENT
                                                                           SCAN - F

250.00        370.00         120.00                                  3R    57   MON PITCH ATTITUDE
                                                                              INDIC ON FDI

250.00        370.00         120.00                                  3L    03   MON VERTICAL SPEED
                                                                              INDIC

250.00        370.00         120.00                                  3A    11   MONITOR AIRSPEED
                                                                              INDIC

250.00        370.00         120.00                                  3S    15   MONITOR A/C HEADING
                                                                              RELATIVE TO SELECTED
                                                                              HEADING ON CI

288.00                                                            030007   ENGINE INSTRUMENT
                                                                           SCAN

295.00                                                            00EV08   C/P EXT VIS SCAN

330.00                                                            16AA01   ADJUST THRUST AND
                                                                           PITCH TO MAINTAIN A
                                                                           900 FPM DESCENT AT
                                                                           250 KCAL USING PITCH
                                                                           CWS MODE OF A.P.
                                                                           PILOT HAS DETERMINED
                                                                           THAT THIS SHOULD
                                                                           PERMIT DECEL TO 210
                                                                           FOR CROSSING BAHRR
                                                                           AT 5000 FT.

330.00        332.73           2.73                                  4B    07   MAKE MINOR THRUST
                                                                              ADJUSTMENT

330.00        335.00           5.00                                  4A    64   MANUALLY CONTROL A/C
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SINCE MISSION START		ACTIVITY TIME	EVENT/PROCEDURE TASK	
BEGINNING	END			
340.00			00EV04	C/P EXT VIS SCAN
363.00			030007	ENGINE INSTRUMENT SCAN
370.00			16BL04	DESCEND THRU 8600.
370.00			160094	ALTITUDE STEP DOWN FROM ATL APPROACH
370.00	375.00	5.00	1P16XX94	NASA 515, DESCEND AND MAINTAIN 6000 FT.
370.00			090038	FLIGHT INSTRUMENT SCAN - F
370.00	490.00	120.00	3R 57	MON PITCH ATTITUDE INDIC ON FDI
370.00	490.00	120.00	3L 03	MON VERTICAL SPEED INDIC
370.00	490.00	120.00	3A 11	MONITOR AIRSPEED INDIC
370.00	490.00	120.00	3S 16	MONITOR A/C HEADING RELATIVE TO SELECTED HEADING ON CI
385.00			00EV05	C/P EXT VIS SCAN
430.00			030007	ENGINE INSTRUMENT SCAN
440.00			00EV03	C/P EXT VIS SCAN
450.00			160002	TUNE ATIS -119.65
458.00	482.00	24.00	1A 15	MON VHF-1 COMM AUDIO
458.00	461.42	3.42	1P160001	MON RADIO COMM - [INFORMATION LIMA ONE SEVEN ZERO FIVE OBSERVATION- TWO
461.42	465.98	4.56	1P160002	FIVE HUNDRED SCATTERED CEILING FOUR THOUSAND BROKEN. VISIBILITY ONE SIX.
465.98	470.54	4.56	1P160003	TEMPERATURE FIVE NINER. WIND ONE ONE ZERO DEGREES AT TEN GUSTING TO ONE SEVEN
470.54	475.10	4.56	1P160004	. ALTIMETER TWO - NINER EIGHT FOUR. SIMULTANEOUS PARALLEL APPROACHES IN
475.10	479.66	4.56	1P160005	OPERATION ON RUNWAYS EIGHT LEFT AND NINER RIGHT. ADVISE CONTROLLER ON INITIAL
479.66	481.94	2.28	1P160006	CONTACT YOU HAVE INFORMATION LIMA.]
460.00			160049	MON ADF/RMI-2
460.00			16BL05	CROSS FT NDB
465.00			00EV09	C/P EXT VIS SCAN
470.00			16AA01	ADJUST THRUST AND PITCH TO MAINTAIN A 900 FPM DESCENT AT 250 KCAS USING PITCH CWS MODE OF A.P. PILOT HAS DETERMINED THAT THIS SHOULD PERMIT DECEL TO 210 FOR CROSSING BAHRR AT 6000 FT.
470.00	472.73	2.73	4B 07	MAKE MINOR THRUST ADJUSTMENT
470.00	475.00	5.00	4A 64	MANUALLY CONTROL A/C
480.00			160083	SET ALTIMETER BARO SETTING TO 29.84
480.00	483.50	3.50	1P 13	MONITOR CALL-OUT
484.00			140032	ALTIMETER BARO SET PROC.
484.00	486.05	2.05	3H 04	MONITOR ALTIMETER BARO SETTING INDIC
484.00	486.05	2.05	3H 03	SET ALTIMETER BARO SETTING CONTROL

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SINCE MISSION START          ACTIVITY                  EVENT/PROCEDURE
BEGINNING      END           TIME                         TASK

490.00                                                 000017   FLIGHT INSTRUMENT
                                                                SCAN - C

490.00       520.00            30.00                      3R    50    MON PITCH ATTITUDE
                                                                     INDIC ON FDI

490.00       520.00            30.00                      3L    02    MON VERTICAL SPEED
                                                                     INDIC

490.00       520.00            30.00                      3A    10    MONITOR AIRSPEED
                                                                     INDIC

490.00       520.00            30.00                      3S    01    MONITOR A/C HEADING
                                                                     RELATIVE TO SELECTED
                                                                     HDG ON CI

513.00                                                 020007   ENGINE INSTRUMENT
                                                                SCAN

519.00                                                 160041   MOF VOR/RMI-1

519.00       521.00             2.00                      5G    04    MON VOR POINTER NO.1
                                                                     ON VOR/RMI 1 INDIC

519.00       521.00             2.00                      5G    05    MON VOR POINTER NO.2
                                                                     ON VOR/RMI 1 INDIC

520.00                                                 160C05   VECTOR FOR BASE LEG
                                                                FROM A/L APPROACH

520.00       525.00             5.00                      1P10ZZ05    NASA 515,TURN LEFT
                                                                     HEADING 180.

523.00                                                 140007   HEADING CHANGE PROC.

523.00       533.00            10.00                      3S    01    MONITOR A/C HEADING
                                                                     RELATIVE TO SELECTED
                                                                     HDG ON CI

523.00       533.00            10.00                      4A    20    ACT FLT CONTROL TO
                                                                     CHANGE HDG

523.00       533.00            10.00                      3L    02    MON VERTICAL SPEED
                                                                     INDIC

523.00       527.92             4.92                      3S    11    SET COURSE DIGITS
                                                                     AND POINTER ON CI
                                                                     USING COURSE CURSOR
                                                                     CONT

528.00       538.00            10.00                      3R    59    MON A/C ATTITUDE
                                                                     RELATIVE TO ROLL
                                                                     COMMAND ON
                                                                     FDI

523.00                                                 10BL06   BEGIN TURN TO BASE

533.00                                                 140007   HEADING CHANGE PROC.

533.00       543.00            10.00                      3S    01    MONITOR A/C HEADING
                                                                     RELATIVE TO SELECTED
                                                                     HDG ON CI

533.00       543.00            10.00                      4A    20    ACT FLT CONTROL TO
                                                                     CHANGE HDG

533.00       543.00            10.00                      3L    02    MON VERTICAL SPEED
                                                                     INDIC

533.00       537.92             4.92                      3S    11    SET COURSE DIGITS
                                                                     AND POINTER ON CI
                                                                     USING COURSE CURSOR
                                                                     CONT

538.00       548.00            10.00                      3R    59    MON A/C ATTITUDE
                                                                     RELATIVE TO ROLL
                                                                     COMMAND ON
                                                                     FDI

540.00                                                 140023   REPORT 1000 FT TO
                                                                LEVEL OFF

542.00       543.70             1.70                      1P    11    MONITOR CALL-OUT

543.00                                                 140007   HEADING CHANGE PROC.

543.00       553.00            10.00                      3S    01    MONITOR A/C HEADING
                                                                     RELATIVE TO SELECTED
                                                                     HDG ON CI

543.00       553.00            10.00                      4A    20    ACT FLT CONTROL TO
                                                                     CHANGE HDG

543.00       553.00            10.00                      3L    02    MON VERTICAL SPEED
                                                                     INDIC

543.00       547.92             4.92                      3S    11    SET COURSE DIGITS
                                                                     AND POINTER ON CI
                                                                     USING COURSE CURSOR
                                                                     CONT
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SINCE MISSION START          ACTIVITY                                   EVENT/PROCEDURE
BEGINNING        END         TIME                                          TASK
548.00        558.00        10.00                                         3R    58   MON A/C ATTITUDE
                                                                                    RELATIVE TO ROLL
                                                                                    COMMAND ON
                                                                                    FDI

550.00                                                                  00EV03   C/P EXT VIS SCAN

555.00                                                                  090003   FLIGHT INSTRUMENT
                                                                                 SCAN - A

555.00        565.00        10.00                                         3R    10   MON PITCH ATTITUDE
                                                                                    INDIC ON FDI

555.00        565.00        10.00                                         3L    02   MON VERTICAL SPEED
                                                                                    INDIC

555.00        565.00        10.00                                         3A    10   MONITOR AIRSPEED
                                                                                    INDIC

555.00        565.00        10.00                                         3S    01   MONITOR A/C HEADING
                                                                                    RELATIVE TO SELECTED
                                                                                    HDG ON CI

565.00                                                                  160041   MON VOR/RMI-1

565.00        567.00         2.00                                         5Q    04   MON VOR POINTER NO.1
                                                                                    ON VOR/RMI 1 INDIC

565.00        567.00         2.00                                         5Q    05   MON VOR POINTER NO.2
                                                                                    ON VOR/RMI 1 INDIC

569.00                                                                  160042   MON ADF/RMI-1

569.00        571.00         2.00                                         5D    28   MON ADF POINTER NO.1
                                                                                    ON ADF/RMI 1 INDIC

569.00        571.00         2.00                                         5D    29   MON ADF POINTER NO.2
                                                                                    ON ADF/RMI 1 INDIC

570.00                                                                  160096   VECTOR TO INTERCEPT
                                                                                 AND FINAL APPROACH
                                                                                 CLEARANCE FROM ATL
                                                                                 APPROACH CONTROL

570.00        580.00        10.00                                        1P16XX06   NASA 515,12 MILES
                                                                                    FROM OM,TURN LT HDG
                                                                                    110.MAINTAIN 5000 FT
                                                                                    UNTIL CROSSING BANRR

580.00        587.00         7.00                                        1P16ZZ06   CLEARED FOR ILS RUN-
                                                                                    WAY 8 LEFT APPROACH.
                                                                                    CONTACT TOWER ON
                                                                                    119.5 AT BANRR.
575.00                                                                  140007   HEADING CHANGE PROC.
575.00        585.00        10.00                                         3S    01   MONITOR A/C HEADING
                                                                                    RELATIVE TO SELECTED
                                                                                    HDG ON CI

575.00        585.00        10.00                                         4A    26   ACT FLT CONTROL TO
                                                                                    CHANGE HDG

575.00        585.00        10.00                                         3L    02   MON VERTICAL SPEED
                                                                                    INDIC

575.00        579.92         4.92                                         3S    11   SET COURSE DIGITS
                                                                                    AND POINTER ON CI
                                                                                    USING COURSE CURSOR
                                                                                    CONT

580.00        590.00        10.00                                         3R    58   MON A/C ATTITUDE
                                                                                    RELATIVE TO ROLL
                                                                                    COMMAND ON
                                                                                    FDI

575.00                                                                  10BL07   TURN TO INTERCEPT
                                                                                 FINAL APPR. COURSE

585.00                                                                  140007   HEADING CHANGE PROC.

585.00        595.00        10.00                                         3S    01   MONITOR A/C HEADING
                                                                                    RELATIVE TO SELECTED
                                                                                    HDG ON CI

585.00        595.00        10.00                                         4A    26   ACT FLT CONTROL TO
                                                                                    CHANGE HDG

585.00        595.00        10.00                                         3L    02   MON VERTICAL SPEED
                                                                                    INDIC

585.00        589.92         4.92                                         3S    11   SET COURSE DIGITS
                                                                                    AND POINTER ON CI
                                                                                    USING COURSE CURSOR
                                                                                    CONT

590.00        600.00        10.00                                         3R    58   MON A/C ATTITUDE
                                                                                    RELATIVE TO ROLL
                                                                                    COMMAND ON
                                                                                    FDI

597.00                                                                  160054   TUNE ATLANTA TOWER
                                                                                 -119.5
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SINCE MISSION START BEGINNING	END	ACTIVITY TIME	EVENT/PROCEDURE TASK		
600.00			160070		MON INSTRUMENTS ON FINAL APP - P
600.00	610.00	10.00	3R	02	MONITOR LOCALIZER INDICATOR ON FDI
600.00	610.00	10.00	3S	04	MON A/C POSITION RELATIVE TO SELECTED COURSE ON CI
600.00	605.00	5.00	3R	03	MON GLIDE SLOPE ATT INDIC ON FDI
300.00	610.00	10.00	3A	10	MONITOR AIRSPEED INDIC
600.00	610.00	10.00	3H	06	MON ALTIMETER
600.00	610.00	10.00	3L	02	MON VERTICAL SPEED INDIC
607.00			160047		MON INSTRUMENTS ON FINAL APP
610.00			16AA02		SELECT ALT HOLD AND AUTO APP FD MODES TO CAPTURE LOCALIZER PRIOR TO BANRR.LEVEL AT 5000 FT
610.00	612.01	2.01	3R	45	SET FD MODE SEL TO AUTO APP
613.00	614.21	1.21	3V	06	MON VOR LOC ANNUN LT AMBER
620.00	622.02	2.02	3R	41	SET FD PITCH MODE SEL TO ALT HOLD
621.00	622.21	1.21	3V	03	MON ALT HOLD ANNUN LT ON
658.00	659.21	1.21	3V	04	MON ALT HOLD ANNUN LT OFF
610.00			140003		ALTITUDE CHANGE PROC
610.00	620.00	10.00	4A	20	ACT FLT CONTROL TO CHANGE ALT
610.00	620.00	10.00	3L	02	MON VERTICAL SPEED INDIC
610.00	610.77	0.77	3H	02	MON CORR BARO ALT INDIC
610.00	620.00	10.00	3R	10	MON PITCH ATTITUDE INDIC ON FDI
610.00	612.82	2.82	4B	06	ACTUATE BOTH THROTTLES
610.00	612.37	2.37	3F	01	MON MACH NO INDIC
610.00			16BL06		LEVEL OFF AT 5000 FT BEGIN DECEL FROM 250 TO 210 KCAS
617.00			160047		MON INSTRUMENTS ON FINAL APP
620.00			16AA03		ADJUST THRUST TO DECEL TO 210 KCAS BEFORE BANRF
620.00	622.50	2.50	4B	08	SET THRUST LEVERS TO IDLE
623.00			160037		CAPTURE ILS LOC BEGIN TURN TO HDG 090
623.00	624.30	1.30	1P	02	MONITOR CALL-OUT
623.00	633.00	10.00	3R	10	MONTIOR INDICATION OF DEVIATION FROM LOCALIZER ON FDI
623.00	633.00	10.00	3S	04	MON A/C POSITION RELATIVE TO SELECTED COURSE ON CI
623.00	633.00	10.00	4A	20	ACT FLT CONTROL TO CHANGE HDG
629.53	632.40	2.87	3S	11	SET COURSE DIGITS AND POINTER ON CI USING COURSE CURSOR CONT
629.53	631.03	1.50	1P160066		CALL OUT-[I HAVE NAV 2 DATA]

SINCE MISSION START BEGINNING	END	ACTIVITY TIME	EVENT/PROCEDURE TASK
627.00	628.21	1.21	3V 06 MON LOC ANNUN LT GREEN AND GLD SLP AMBER
633.00	643.00	10.00	3R 16 MONTIOR INDICATION OF DEVIATION FROM LOCALIZER ON FDI
633.00	643.00	10.00	3S 04 MON A/C POSITION RELATIVE TO SELECTED COURSE ON CI
633.00	643.00	10.00	4A 26 ACT FLT CONTROL TO CHANGE HDG
627.00			100047 MON INSTRUMENTS ON FINAL APP
637.00			100047 MON INSTRUMENTS ON FINAL APP
643.00			100046 ANNUNCIATOR RECALL
645.00			100073 CONTROL A/C ON FINAL APPROACH - C (5)
645.00	650.00	5.00	4A 30 ACT FLT CONT TO ALIGNA/C WITH ATT INDICATORS
645.00			100079 MON INSTRUMENTS ON FINAL APP - P
645.00	655.00	10.00	3R 02 MONITOR LOCALIZER INDICATOR ON FDI
645.00	655.00	10.00	3S 04 MON A/C POSITION RELATIVE TO SELECTED COURSE ON CI
645.00	650.00	5.00	3R 08 MON GLIDE SLOPE ATT INDIC ON FDI
645.00	655.00	10.00	3A 10 MONITOR AIRSPEED INDIC
645.00	655.00	10.00	3H 06 MON ALTIMETER
645.00	655.00	10.00	3L 02 MON VERTICAL SPEED INDIC
647.00			100047 MON INSTRUMENTS ON FINAL APP
650.00			100073 CONTROL A/C ON FINAL APPROACH - C (5)
650.00	655.00	5.00	4A 30 ACT FLT CONT TO ALIGNA/C WITH ATT INDICATORS
655.00			100041 MON VOR/RMI-1
655.00	657.00	2.00	5G 04 MON VOR POINTER NO.1 ON VOR/RMI 1 INDIC
655.00	657.00	2.00	5G 05 MON VOR POINTER NO.2 ON VOR/RMI 1 INDIC
657.00			100042 MON ADF/RMI-1
657.00	659.00	2.00	5D 28 MON ADF POINTER NO.1 OK ADF/RMI 1 INDIC
657.00	659.00	2.00	5D 29 MON ADF POINTER NO.2 ON ADF/RMI 1 INDIC
657.00			100043 MON ADF/RMI-2
660.00			10BL09 REACH 210 KCAS
660.00			100054 ACQUIRE GLIDESLOPE
662.00	664.58	2.58	3R 09 MON INITIAL MOVEMENT OF GLIDE SLOPE COMMAND BAR ON FDI
662.60	663.60	1.00	1P 10 MONITOR CALL-OUT
664.58	665.79	1.21	3V 09 MON GLIDE SLOPE ANNUN LT GREEN
664.00			100081 CONTACT TOWER FOR FINAL LANDING CLEARANCE
674.40	681.40	7.00	1B 19 MON VHF-2 COMM AUDIO
674.40	678.40	4.00	1P100040 MON RADIO COMM - [NASA 515, NO. 3 FOR 9L.DC-9 3 MI AHEAD.WIND 110
678.40	681.40	3.00	1P100041 AT NINE.CLEARED TO LAND RW 9L.

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OF POOR QUALITY

SINCE MISSION START BEGINNING	END	ACTIVITY TIME	EVENT/PROCEDURE TASK
664.00			16BL10 CROSS BARRR
670.00			160072 CONTROL AIRCRAFT ON FINAL APP - B(240)
670.00	910.00	240.00	4A 30 ACT FLT CONT TO ALIGNA/C WITH ATT INDICATORS
684.00			160011 SET FLAPS TO FLAPS 1
684.00	684.70	0.70	1P160066 CALL OUT -[FLAPS 1]
689.00	689.70	0.70	1P 10 MONITOR CALL-OUT
691.00	691.44	0.44	7F 30 MON ENG NO 2 EPR IND
691.00	691.44	0.44	7F 25 MON ENG NO 1 EPR IND
670.00			160050 MON INSTRUMENTS ON FINAL APP - P
670.00	700.00	30.00	3R 02 MONITOR LOCALIZER INDICATOR ON FDI
670.00	700.00	30.00	3S 17 MON A/C HEADING RELATIVE TO SELECTED COURSE ON CI
670.00	700.00	30.00	3R 03 MON GLIDE SLOPE ATT INDIC ON FDI
670.00	700.00	30.00	3A 10 MONITOR AIRSPEED INDIC
670.00	700.00	30.00	3H 06 MON ALTIMETER
670.00	700.00	30.00	3L 02 MON VERTICAL SPEED INDIC
685.00			16BL11 REACH 190 KCAS
694.00			160017 SET FLAPS TO FLAPS 5
694.00	694.70	0.70	1P160081 CALL OUT -[FLAPS 5]
694.00			160018 FLAP SET PROCEDURE
700.03	700.73	0.70	1P 10 MONITOR CALL-OUT
701.00	701.44	0.44	7F 25 MON ENG NO 1 EPR IND
701.44	701.88	0.44	7F 30 MON ENG NO 2 EPR IND
699.00			030007 ENGINE INSTRUMENT SCAN
700.00			160050 MON INSTRUMENTS ON FINAL APP - P
700.00	730.00	30.00	3R 02 MONITOR LOCALIZER INDICATOR ON FDI
700.00	730.00	30.00	3S 17 MON A/C HEADING RELATIVE TO SELECTED COURSE ON CI
700.00	730.00	30.00	3R 03 MON GLIDE SLOPE ATT INDIC ON FDI
700.00	730.00	30.00	3A 10 MONITOR AIRSPEED INDIC
700.00	730.00	30.00	3H 06 MON ALTIMETER
700.00	730.00	30.00	3L 02 MON VERTICAL SPEED INDIC
708.00			16BL12 REACH 170 KCAS
710.00			160047 MON INSTRUMENTS ON FINAL APP
720.00			160047 MON INSTRUMENTS ON FINAL APP
730.00			160047 MON INSTRUMENTS ON FINAL APP
730.00			00EV21 PILOT EXT VIS SCAN
730.00	735.00	5.00	9A 10 PILOT EXTERNAL VISION SCAN
740.00			160069 SET SPEED BRAKES
740.00	743.26	3.26	4F 02 SET SPEED BRAKE LEVER TO ARM
740.00	740.73	0.73	4F 07 MONITOR SPEED BRAKE LEVER ARMED LT GREEN

SINCE MISSION START		ACTIVITY			
BEGINNING	END	TIME	EVENT/PROCEDURE TASK		
744.00			160048	MON ADF/RMI-2	
745.00			160080	MON INSTRUMENTS ON FINAL APP - P	
745.00	775.00	30.00	3R	62	MONITOR LOCALIZER INDICATOR ON FDI
745.00	775.00	30.00	3S	17	MON A/C HEADING RELATIVE TO SELECTED COURSE ON CI
745.00	775.00	30.00	3R	63	MON GLIDE SLOPE ATT INDIC ON FDI
745.00	775.00	30.00	3A	10	MONITOR AIRSPEED INDIC
745.00	775.00	30.00	3H	06	MON ALTIMETER
745.00	775.00	30.00	3L	02	MON VERTICAL SPEED INDIC
745.00			16BL13	CROSS REIFF	
748.00			160070	SET AUTO BRAKES	
755.00			00EV01	C/P EXT VIS SCAN	
765.00			160047	MON INSTRUMENTS ON FINAL APP	
775.00			16004	MON INSTRUMENTS ON FINAL APP	
775.00			160080	MON INSTRUMENTS ON FINAL APP - P	
775.00	805.00	30.00	3R	62	MONITOR LOCALIZER INDICATOR ON FDI
775.00	805.00	30.00	3S	17	MON A/C HEADING RELATIVE TO SELECTED COURSE ON CI
775.00	805.00	30.00	3R	63	MON GLIDE SLOPE ATT INDIC ON FDI
775.00	805.00	30.00	3A	10	MONITOR AIRSPEED INDIC
775.00	805.00	30.00	3H	06	MON ALTIMETER
775.00	805.00	30.00	3L	02	MON VERTICAL SPEED INDIC
800.00			160058	REPORT RUNWAY IN SIGHT	
802.00	803.00	1.00	1P	10	MONITOR CALL-OUT
805.00			00EV21	PILOT EXT VIS SCAN	
805.00	810.00	5.00	8A	10	PILOT EXTERNAL VISION SCAN
808.00			160016	FLAP SET PROCEDURE	
814.03	814.73	0.70	1P	10	MONITOR CALL-OUT
815.00	815.44	0.44	7F	25	MON ENG NO 1 EPR IND
815.44	815.88	0.44	7F	30	MON ENG NO 2 EPR IND
808.00			160025	SET FLAPS TO FLAPS 15	
808.00	808.70	0.70	1P160062	CALL OUT -[FLAPS 15]	
812.00			160042	MON ADF/RMI-1	
812.00	814.00	2.00	8D	26	MON ADF POINTER NO.1 ON ADF/RMI 1 INDIC
812.00	814.00	2.00	8D	28	MON ADF POINTER NO.2 ON ADF/RMI 1 INDIC
815.00			160059	CROSS RWY 06 OUTER MARKER	
815.00	815.72	0.72	3V	11	MONITOR OUTER MARKER LT ON AND AUDIBLE SIGNAL
817.00	818.80	1.80	1P160075	CALL OUT -[GEAR DOWN AND LANDING CHECK-LIST]	
815.00	817.10	2.10	3N	03	START ELAPSED TIME INDIC

ORIGINAL PAGE IS
OF POOR QUALITY

SINCE MISSION START BEGINNING	END	ACTIVITY TIME	EVENT/PROCEDURE TASK
815.00			160L14 CROSS CATTA LOW-GEAR THEN EXTENDED AND 155 KCAS MAINTAINED
815.00			160040 MON RADIO ALTIMETER
820.00			160060 EXTEND LANDING GEAR
820.00			160080 MON INSTRUMENTS ON FINAL APP - P
820.00	850.00	30.00	3R 02 MONITOR LOCALIZER INDICATOR ON FDI
820.00	850.00	30.00	3S 17 MON A/C HEADING RELATIVE TO SELECTED COURSE ON CI
820.00	850.00	30.00	3R 03 MON GLIDE SLOPE ATT INDIC ON FDI
820.00	850.00	30.00	3A 10 MONITOR AIRSPEED INDIC
820.00	850.00	30.00	3H 06 MON ALTIMETER
820.00	850.00	30.00	3L 02 MON VERTICAL SPEED INDIC
845.00			160082 LANDING CHECKLIST
847.00	847.60	0.60	1P 10 MONITOR CALL-OUT
847.60	848.00	0.40	1P 14 MONITOR CALL-OUT
850.00	850.70	0.70	1P 10 MONITOR CALL-OUT
851.00	852.30	1.30	1P160079 CALL OUT -(ARMED - GREEN LIGHT)
854.50	855.20	0.70	1P 16 MONITOR CALL-OUT
855.20	856.20	1.00	1P 10 MONITOR CALL-OUT
856.20	856.60	0.40	1P 14 MONITOR CALL-OUT
856.60	857.70	1.10	1P 12 MONITOR CALL-OUT
850.00			00EV21 PILOT EXT VIS SCAN
850.00	855.00	5.00	6A 10 PILOT EXTERNAL VISION SCAN
855.00			160080 MON INSTRUMENTS ON FINAL APP - P
855.00	885.00	30.00	3R 02 MONITOR LOCALIZER INDICATOR ON FDI
855.00	885.00	30.00	3S 17 MON A/C HEADING RELATIVE TO SELECTED COURSE ON CI
855.00	885.00	30.00	3R 03 MON GLIDE SLOPE ATT INDIC ON FDI
855.00	885.00	30.00	3A 10 MONITOR AIRSPEED INDIC
855.00	885.00	30.00	3H 06 MON ALTIMETER
855.00	885.00	30.00	3L 02 MON VERTICAL SPEED INDIC
865.00			00EV02 C/P EXT VIS SCAN
877.00			160047 MON INSTRUMENTS ON FINAL APP
885.00			00EV21 PILOT EXT VIS SCAN
885.00	890.00	5.00	6A 10 PILOT EXTERNAL VISION SCAN
889.00			030007 ENGINE INSTRUMENT SCAN
890.00			160080 MON INSTRUMENTS ON FINAL APP - P
890.00	920.00	30.00	3R 02 MONITOR LOCALIZER INDICATOR ON FDI
890.00	920.00	30.00	3S 17 MON A/C HEADING RELATIVE TO SELECTED COURSE ON CI
890.00	920.00	30.00	3R 03 MON GLIDE SLOPE ATT INDIC ON FDI
890.00	920.00	30.00	3A 10 MONITOR AIRSPEED INDIC
890.00	920.00	30.00	3H 06 MON ALTIMETER

SINCE MISSION START BEGINNING	END	ACTIVITY TIME	EVENT/PROCEDURE TASK
890.00	920.00	30.00	3L 02 MON VERTICAL SPEED INDIC
895.00			160049 MON RADIO ALTIMETER
900.00			00EV04 C/P EXT VIS SCAN
923.00			160053 DESCEND THRU -DECISION HEIGTH
925.58	926.38	0.80	1P 11 MONITOR CALL-OUT
924.00			160056 CONTROL AIRCRAFT THRU TOUCHDOWN
924.00	950.00	26.00	5A 06 CAPT VIEW THRU NO.1 WINDOW
924.00	950.00	26.00	4A 06 MANUALLY CONT A/C
925.00			160054 CROSS RWY 08 MIDDLE MARKER
925.00	926.91	1.91	2V 13 MONITOR MIDDLE MARKER ANNUN LT ON AND AUDIBLE SIGNAL
926.00			16BL15 CROSS MIDDLE MARKER
930.00			00EV02 C/P EXT VIS SCAN
930.00			080003 FLIGHT INSTRUMENT SCAN - A
930.00	940.00	10.00	3R 10 MON PITCH ATTITUDE INDIC ON FDI
930.00	940.00	10.00	3L 02 MON VERTICAL SPEED INDIC
930.00	940.00	10.00	3A 10 MONITOR AIRSPEED INDIC
930.00	940.00	10.00	3S 01 MONITOR A/C HEADING RELATIVE TO SELECTED HDG ON CI
940.00			160047 MON INSTRUMENTS ON FINAL APP
941.00			16BL16 CROSS RW THRESHOLD
950.00			00EV02 C/P EXT VIS SCAN
950.00			160058 TOUCHDOWN
950.00	952.50	2.50	4B 08 SET THRUST LEVERS TO IDLE
950.00	1025.00	75.00	4A 31 MANUALLY CONTROL A/C
952.50	973.50	21.00	4C 01 SET THRUST REVERSER LEVERS TO ON
974.00	976.78	2.78	4C 02 SET THRUST REVERSER LEVERS TO OFF
978.00	981.28	3.28	4F 01 SET SPD BRAKE LEVER TO DOWN
950.00	1025.00	75.00	4M 04 ACTUATE NOSE GEAR STEERING USING RUDDER PEDALS
950.00	1025.00	75.00	8A 01 VIEW RUNWAY AHEAD
950.00			16BL17 TOUCHDOWN
950.00			080003 FLIGHT INSTRUMENT SCAN - A
950.00	960.00	10.00	3R 10 MON PITCH ATTITUDE INDIC ON FDI
950.00	960.00	10.00	3L 02 MON VERTICAL SPEED INDIC
950.00	960.00	10.00	3A 10 MONITOR AIRSPEED INDIC
950.00	960.00	10.00	3S 01 MONITOR A/C HEADING RELATIVE TO SELECTED HDG ON CI
960.00			160047 MON INSTRUMENTS ON FINAL APP
970.00			00EV02 C/P EXT VIS SCAN
970.00			080003 FLIGHT INSTRUMENT SCAN - A

ORIGINAL PAGE IS
OF POOR QUALITY

SINCE MISSION START BEGINNING	END	ACTIVITY TIME	EVENT/PROCEDURE TASK		
970.00	980.00	10.00	3R	10	MON PITCH ATTITUDE INDIC ON FDI
970.00	980.00	10.00	3L	02	MON VERTICAL SPEED INDIC
970.00	980.00	10.00	3A	10	MONITOR AIRSPEED INDIC
970.00	980.00	10.00	3S	01	MONITOR A/C HEADING RELATIVE TO SELECTED HDG ON CI
984.00			160071		HANDOFF TO GROUND CONTROL -121.9
984.00	990.00	6.00	1B	18	MON VHF-2 COMM AUDIO
984.00	987.50	3.50	1P160087		MON RADIO COMM - [NASA 515,EXIT RUN-WAY NEXT INTERSEC-TION. CONTACT GROUND
987.50	990.00	2.50	1P160088		POINT NINER WHEN CLEAR OF RUNWAY, OVER]
1004.00	1007.50	3.50	1B	18	MON VHF-2 COMM AUDIO
1004.00	1007.50	3.50	1P160091		MON RADIO COMM - [NASA 515, ATLANTA GROUND. TAXI TO RAMP VIA NORTHEAST-SOUTH-
1007.50	1008.50	1.00	1P160092		WEST TAXIWAY, OVER]
990.00			000003		FLIGHT INSTRUMENT SCAN - A
990.00	1000.00	10.00	3R	10	MON PITCH ATTITUDE INDIC ON FDI
990.00	1000.00	10.00	3L	02	MON VERTICAL SPEED INDIC
990.00	1000.00	10.00	3A	10	MONITOR AIRSPEED INDIC
990.00	1000.00	10.00	3S	01	MONITOR A/C HEADING RELATIVE TO SELECTED HDG ON CI
1010.00			00EV03		C/P EXT VIS SCAN

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****************                ****************************************                  NOV10 1986
* UNSHIFTED    *                *                                      *
****************                *       MISSION SCENARIO REPORT        *
                                *                                      *
                                *  MISSION - MD-3 DATA LINK            *
                                *           ILS AP-BASE LN.            *
                                *                                      *
                                *  CONFIGURATION - 737 CONVNT FLT DCK  *
                                *                                      *
                                *  CREWMEMBER - PILOT                  *
                                *                                      *
                                ****************************************

      TIME INTERVAL (SECS)          TOTAL                              FLIGHT PHASE
      SINCE MISSION START           ACTIVITY                               EVENT/PROCEDURE
      BEGINNING       END           TIME                                       TASK

        0.00                                                           16DL DATA LINK FFD ILS AP

        0.00                                                               16DL01   CROSS LOGEN INTERSEC
                                                                                    TION AT 250 KCAS AND
                                                                                    14000 FEET.ATL CENTR
                                                                                    HAS PREVIOUSLY INSTR
                                                                                    UCTED NASA 515 TO
                                                                                    MONITOR ATL APPROACH
                                                                                    ON 126.9 AT LOGEN.
                                                                                    VHF-2R HAS BEEN SET.

        0.00                                                               16DL90   MONITOR ATL APPROACH
                                                                                    ON 126.9/VHF-2R

        0.00                                                               140003   ALTITUDE CHANGE PROC

        0.00        10.00             10.00                                    4A     29   ACT FLT CONTROL TO
                                                                                          CHANGE ALT

        0.00        10.00             10.00                                    3L     02   MON VERTICAL SPEED
                                                                                          INDIC

        0.00         0.77              0.77                                    3H     02   MON CORR BARO ALT
                                                                                          INDIC

        0.00        10.00             10.00                                    3R     10   MON PITCH ATTITUDE
                                                                                          INDIC ON FDI

        0.00         2.82              2.82                                    4B     03   ACTUATE BOTH
                                                                                          THROTTLES

        0.00         2.37              2.37                                    3F     01   MON MACH NO INDIC
       10.00
                                                                           030039   FLIGHT INSTRUMENT
                                                                                    SCAN - F

       10.00       130.00            120.00                                    3R     57   MON PITCH ATTITUDE
                                                                                          INDIC ON FDI

       10.00       130.00            120.00                                    3L     03   MON VERTICAL SPEED
                                                                                          INDIC

       10.00       130.00            120.00                                    3A     11   MONITOR AIRSPEED
                                                                                          INDIC

       10.00       130.00            120.00                                    3G     15   MONITOR A/C HEADING
                                                                                          RELATIVE TO SELECTED
                                                                                          HEADING ON CI

       15.00                                                               160013   SET NAV-1 TO RUNWAY
                                                                                    8L ILS -109.3

       31.50        34.00              2.50                                    1P     12   MONITOR CALL-OUT

       34.00        36.25              2.25                                    5G     04   MON VOR POINTER NO.1
                                                                                          ON VOR/RMI 1 INDIC

       15.00                                                               06EV30   PILOT EXT VIS SCAN

       15.00        65.00             50.00                                    8A     13      PILOT EXTERNAL
                                                                                          VISION SCAN

       38.00                                                               160039   SET ADF-1 TO CATTA
                                                                                          -375KC

       45.73        47.23              1.50                                    1P     02   MONITOR CALL-OUT
       49.00
                                                                           160040   SET ADF-2 TO FLANC
                                                                                          -344

       54.00        55.50              1.50                                    1P     02   MONITOR CALL-OUT
       58.00
                                                                           160038   SET DECISION HEIGTH
                                                                                    ON RADIO ALTIMETER

       64.00                                                               030007   ENGINE INSTRUMENT
                                                                                    SCAN

       65.00                                                               16AA01   ADJUST THRUST AND
                                                                                    PITCH TO MAINTAIN A
                                                                                    800 FPM DESCENT AT
                                                                                    250 KCAS USING PITCH
                                                                                    CWS MODE OF A.P.
                                                                                    PILOT HAS DETERMINED
                                                                                    THAT THIS SHOULD
                                                                                    PERMIT DECEL TO 210
                                                                                    FOR CROSSING BANRN
                                                                                    AT 5000 FT.
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SINCE MISSION BEGINNING START	END	ACTIVITY TIME	EVENT/PROCEDURE TASK
65.00	67.73	2.73	4B 07 MAKE MINOR THRUST ADJUSTMENT
65.00	70.00	5.00	4A 04 MANUALLY CONTROL A/C
70.00			160005 DESCENT AND APPROACH CHECKLIST - 1
70.00	72.00	2.00	1P160043 CALL OUT-[DESCENT AND APPROACH CHECK-LIST]
85.00	86.00	1.00	1P 10 MONITOR CALL-OUT
87.00	87.80	0.80	1P 07 MONITOR REPORT
90.00	91.80	1.80	1P 13 MONITOR CALL-OUT
98.00	98.40	0.40	1P 16 MONITOR REPORT
70.00			00EV33 PILOT EXT VIS SCAN
70.00	170.00	100.00	8A 13 PILOT EXTERNAL VISION SCAN
100.00			160006 DESCENT AND APPROACH CHECKLIST - 2
102.00	102.90	0.90	1P 11 MONITOR CALL-OUT
103.00	106.54	3.54	7M 05 SET ENG NO.1 START SW TO FLT
106.54	108.28	1.74	7M 06 SET ENG NO.2 START SW TO FLT
108.50	109.00	0.50	1P160043 CALL OUT [FLIGHT]
111.00	112.10	1.10	1P 12 MONITOR CALL-OUT
114.20	114.50	0.30	1P 16 MONITOR REPORT
116.50	117.90	1.40	1P 13 MONITOR CALL-OUT
123.40	124.70	1.30	1P 09 MONITOR REPORT
128.00			160007 DESCENT AND APPROACH CHECKLIST - 3
128.00	129.50	1.50	1P 02 MONITOR CALL-OUT
146.00	147.90	1.90	1P 14 MONITOR CALL-OUT
148.00	150.57	2.57	3A 07 MON V-REF BUG SETTING
148.00	150.57	2.57	3A 05 SET V-REF BUG
151.00	154.00	3.00	3A 18 CAPT CHECK F.O.<S V-REF BUG SETTING
154.00	155.60	1.60	1P 08 MONITOR REPORT
157.60	158.90	1.30	1P 02 MONITOR CALL-OUT
130.00			090019 FLIGHT INSTRUMENT SCAN - D
130.00	190.00	60.00	3R 56 MON PITCH ATTITUDE INDIC ON FDI
130.00	190.00	60.00	3L 02 MON VERTICAL SPEED INDIC
130.00	190.00	60.00	3A 10 MONITOR AIRSPEED INDIC
130.00	190.00	60.00	3S 15 MONITOR A/C HEADING RELATIVE TO SELECTED HEADING ON CI
165.00			030007 ENGINE INSTRUMENT SCAN
172.00			00EV03 C/P EXT VIS SCAN
195.00			160040 MON ADF/RMI-2
195.00			16DL01 HANDOFF TO ATL FINAL APPROACH CONTROLLER VECTOR TO DOWNWIND
195.00	196.60	1.60	1D16XX01 MON INFORMATION MANAGEMENT ATENSON
196.60	198.60	2.00	1D16XX02 MON INFORMATION MANAGEMENT DISPLAY [MODE-S UPLINK PNDG] AMBER
200.40	210.40	10.00	1D16AA01 MONITOR UPLINK CALL-OUT FROM COPILOT
200.00			140007 HEADING CHANGE PROC.

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SINCE MISSION START        ACTIVITY                  EVENT/PROCEDURE
BEGINNING       END        TIME                           TASK

200.00       210.00          10.00                      3S    01   MONITOR A/C HEADING
                                                                  RELATIVE TO SELECTED
                                                                  HDG ON CI

200.00       210.00          10.00                      4A    20   ACT FLT CONTROL TO
                                                                  CHANGE HDG

200.00       210.00          10.00                      3L    02   MON VERTICAL SPEED
                                                                  INDIC

200.00       204.92           4.92                      3S    11   SET COURSE DIGITS
                                                                  AND POINTER ON CI
                                                                  USING COURSE CURSOR
                                                                  CONT

205.00       215.00          10.00                      3R    56   MON A/C ATTITUDE
                                                                  RELATIVE TO ROLL
                                                                  COMMAND ON
                                                                  FDI

200.00                                              16BL02   BEGIN TURN TO DOWN-
                                                             WIND LEG

210.00                                              16BL03   DESCEND THRU 11000.

215.00                                              16AA01   ADJUST THRUST AND
                                                             PITCH TO MAINTAIN A
                                                             900 FPM DESCENT AT
                                                             250 KCAS USING PITCH
                                                             CWS MODE OF A.P.
                                                             PILOT HAS DETERMINED
                                                             THAT THIS SHOULD
                                                             PERMIT DECEL TO 210
                                                             FOR CROSSING BANRR
                                                             AT 6000 FT.

215.00       217.73           2.73                      4B    07   MAKE MINOR THRUST
                                                                  ADJUSTMENT

215.00       220.00           5.00                      4A    64   MANUALLY CONTROL A/C

219.00                                              16OO02   TUNE ATL APPROACH
                                                             ON 127.25

225.00                                              16DL03   MONITOR ATL APPROACH
                                                             ON 127.25/VHF-2L

220.00                                              000017   FLIGHT INSTRUMENT
                                                             SCAN - C

220.00       250.00          30.00                      3R    56   MON PITCH ATTITUDE
                                                                  INDIC ON FDI

220.00       250.00          30.00                      3L    02   MON VERTICAL SPEED
                                                                  INDIC

220.00       250.00          30.00                      3A    10   MONITOR AIRSPEED
                                                                  INDIC

220.00       250.00          30.00                      3S    01   MONITOR A/C HEADING
                                                                  RELATIVE TO SELECTED
                                                                  HDG ON CI

240.00                                              00EV02   C/P EXT VIS SCAN

250.00                                              000030   FLIGHT INSTRUMENT
                                                             SCAN - F

250.00       370.00         120.00                      3R    57   MON PITCH ATTITUDE
                                                                  INDIC ON FDI

250.00       370.00         120.00                      3L    03   MON VERTICAL SPEED
                                                                  INDIC

250.00       370.00         120.00                      3A    11   MONITOR AIRSPEED
                                                                  INDIC

250.00       370.00         120.00                      3S    15   MONITOR A/C HEADING
                                                                  RELATIVE TO SELECTED
                                                                  HEADING ON CI

285.00                                              000007   ENGINE INSTRUMENT
                                                             SCAN

295.00                                              00EV03   C/P EXT VIS SCAN

330.00                                              16AA01   ADJUST THRUST AND
                                                             PITCH TO MAINTAIN A
                                                             900 FPM DESCENT AT
                                                             250 KCAS USING PITCH
                                                             CWS MODE OF A.P.
                                                             PILOT HAS DETERMINED
                                                             THAT THIS SHOULD
                                                             PERMIT DECEL TO 210
                                                             FOR CROSSING BANRR
                                                             AT 6000 FT.

330.00       332.73           2.73                      4B    07   MAKE MINOR THRUST
                                                                  ADJUSTMENT

330.00       335.00           5.00                      4A    64   MANUALLY CONTROL A/C

340.00                                              00EV04   C/P EXT VIS SCAN
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ORIGINAL PAGE IS
OF POOR QUALITY

SINCE MISSION START BEGINNING	END	ACTIVITY TIME	EVENT/PROCEDURE TASK
368.00			030007 ENGINE INSTRUMENT SCAN
370.00			16DL04 DESCEND THRU 6000.
370.00			16DL04 ALTITUDE STEP DOWN
370.00	371.00	1.00	1D16XX01 MON INFORMATION MANAGEMENT ATENSON
371.00	373.00	2.00	1D16XX02 MON INFORMATION MANAGEMENT DISPLAY (MODE-S UPLINK PNDG) AMBER
375.40	379.40	4.00	1D16AA04 MONITOR UPLINK CALL-OUT FROM COPILOT
370.00			090039 FLIGHT INSTRUMENT SCAN - F
370.00	490.00	120.00	3R 07 MON PITCH ATTITUDE INDIC ON FDI
370.00	490.00	120.00	3L 03 MON VERTICAL SPEED INDIC
370.00	490.00	120.00	3A 11 MONITOR AIRSPEED INDIC
370.00	490.00	120.00	3S 15 MONITOR A/C HEADING RELATIVE TO SELECTED HEADING ON CI
385.00			90EV08 C/P EXT VIS SCAN
430.00			030007 ENGINE INSTRUMENT SCAN
450.00			16DL02 RECEIVE ATL ETIS TERMINAL INFORMATION
458.60	460.20	1.60	1D16XX01 MON INFORMATION MANAGEMENT ATENSON
460.20	462.20	2.00	1D16XX06 MON VISUAL ALERT DSP (MODE-S UPLINK PNDG) INDENTED BLUE
460.00			16DL05 CROSS FT HOB
470.00			16AA01 ADJUST THRUST AND PITCH TO MAINTAIN A 900 FPM DESCENT AT 250 KCAS USING PITCH CWS MODE OF A.P. PILOT HAS DETERMINED THAT THIS SHOULD PERMIT DECEL TO 210 FOR CROSSING BANRR AT 6000 FT.
470.00	472.73	2.73	4B 07 MAKE MINOR THRUST ADJUSTMENT
470.00	475.00	5.00	4A 04 MANUALLY CONTROL A/C
480.00			150003 SET ALTIMETER BARO SETTING TO 29.94
480.00	483.50	3.50	1P 12 MONITOR CALL-OUT
484.00			140032 ALTIMETER BARO SET PROC.
484.00	486.65	2.65	3H 04 MONITOR ALTIMETER BARO SETTING INDIC
484.00	486.65	2.65	3H 03 SET ALTIMETER BARO SETTING CONTROL
490.00			090017 FLIGHT INSTRUMENT SCAN - C
490.00	520.00	30.00	3R 06 MON PITCH ATTITUDE INDIC ON FDI
490.00	520.00	30.00	3L 02 MON VERTICAL SPEED INDIC
490.00	520.00	30.00	3A 10 MONITOR AIRSPEED INDIC
490.00	520.00	30.00	3S 01 MONITOR A/C HEADING RELATIVE TO SELECTED HDG ON CI
513.00			030007 ENGINE INSTRUMENT SCAN
519.00			160041 MON VOR/RMI-1
519.00	521.00	2.00	5G 04 MON VOR POINTER NO.1 ON VOR/RMI 1 INDIC
519.00	521.00	2.00	5G 05 MON VOR POINTER NO.2 ON VOR/RMI 1 INDIC
520.00			16DL06 VECTOR FOR BASE LEG

SINCE MISSION START BEGINNING	END	ACTIVITY TIME	EVENT/PROCEDURE TASK		
520.00	521.80	1.80	1D16XX01		MON INFORMATION MANAGEMENT ATENSON
521.60	523.60	2.00	1D16XX02		MON INFORMATION MANAGEMENT DISPLAY [MODE-S UPLINK PNDG] AMBER
525.40	528.40	3.00	1D16AA05		MONITOR UPLINK CALL-OUT FROM COPILOT
523.00			140007		HEADING CHANGE PROC.
523.00	533.00	10.00	3S	01	MONITOR A/C HEADING RELATIVE TO SELECTED HDG ON CI
523.00	533.00	10.00	4A	28	ACT FLT CONTROL TO CHANGE HDG
523.00	533.00	10.00	3L	02	MON VERTICAL SPEED INDIC
523.00	527.92	4.92	3S	11	SET COURSE DIGITS AND POINTER ON CI USING COURSE CURSOR CONT
528.00	538.00	10.00	3R	58	MON A/C ATTITUDE RELATIVE TO ROLL COMMAND ON FDI
523.00			16BL06		BEGIN TURN TO BASE
533.00			140007		HEADING CHANGE PROC.
533.00	543.00	10.00	3S	01	MONITOR A/C HEADING RELATIVE TO SELECTED HDG ON CI
533.00	543.00	10.00	4A	28	ACT FLT CONTROL TO CHANGE HDG
533.00	543.00	10.00	3L	02	MON VERTICAL SPEED INDIC
533.00	537.92	4.92	3S	11	SET COURSE DIGITS AND POINTER ON CI USING COURSE CURSOR CONT
538.00	548.00	10.00	3R	58	MON A/C ATTITUDE RELATIVE TO ROLL COMMAND ON FDI
540.00			140023		REPORT 1000 FT TO LEVEL OFF
542.00	543.70	1.70	1P	11	MONITOR CALL-OUT
543.00			140007		HEADING CHANGE PROC.
543.00	553.00	10.00	3S	01	MONITOR A/C HEADING RELATIVE TO SELECTED HDG ON CI
543.00	553.00	10.00	4A	28	ACT FLT CONTROL TO CHANGE HDG
543.00	553.00	10.00	3L	02	MON VERTICAL SPEED INDIC
543.00	547.92	4.92	3S	11	SET COURSE DIGITS AND POINTER ON CI USING COURSE CURSOR CONT
548.00	558.00	10.00	3R	58	MON A/C ATTITUDE RELATIVE TO ROLL COMMAND ON FDI
550.00			00EV03		C/P EXT VIS SCAN
555.00			990003		FLIGHT INSTRUMENT SCAN - A
555.00	565.00	10.00	3R	10	MON PITCH ATTITUDE INDIC ON FDI
555.00	565.00	10.00	3L	02	MON VERTICAL SPEED INDIC
555.00	565.00	10.00	3A	16	MONITOR AIRSPEED INDIC
555.00	565.00	10.00	3S	01	MONITOR A/C HEADING RELATIVE TO SELECTED HDG ON CI
565.00			180041		MON VOR/RMI-1
565.00	567.00	2.00	5G	04	MON VOR POINTER NO.1 ON VOR/RMI 1 INDIC

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SINCE MISSION START BEGINNING	END	ACTIVITY TIME	EVENT/PROCEDURE	TASK	
565.00	567.00	2.00		5R 05	MON VOR POINTER NO.2 ON VOR/RMI 1 INDIC
569.00			160042		MON ADF/RMI-1
569.00	571.00	2.00		6D 28	MON ADF POINTER NO.1 ON ADF/RMI 1 INDIC
569.00	571.00	2.00		6D 29	MON ADF POINTER NO.2 ON ADF/RMI 1 INDIC
570.00			10DL98		VECTOR TO FINAL APPR
570.00	571.60	1.60		1D16XX01	MON INFORMATION MANAGEMENT ATENSON
571.60	573.60	2.00		1D16XX02	MON INFORMATION MANAGEMENT DISPLAY (MODE-S UPLINK PHDG) AMBER
575.40	584.40	9.00		1D16AA96	MONITOR UPLINK CALL-OUT FROM COPILOT
584.40	591.40	7.00		1D16AA97	MONITOR UPLINK CALL-OUT FROM COPILOT
575.00			140007		HEADING CHANGE PROC.
575.00	585.00	10.00		3S 01	MONITOR A/C HEADING RELATIVE TO SELECTED HDG ON CI
575.00	585.00	10.00		4A 20	ACT FLT CONTROL TO CHANGE HDG
575.00	585.00	10.00		3L 02	MON VERTICAL SPEED INDIC
575.00	579.92	4.92		3S 11	SET COURSE DIGITS AND POINTER ON CI USING COURSE CURSOR CONT
580.00	590.00	10.00		3R 58	MON A/C ATTITUDE RELATIVE TO ROLL COMMAND ON FDI
575.00			195L07		TURN TO INTERCEPT FINAL APPR. COURSE
585.00			140007		HEADING CHANGE PROC.
585.00	595.00	10.00		3S 01	MONITOR A/C HEADING RELATIVE TO SELECTED HDG ON CI
585.00	595.06	10.00		4A 20	ACT FLT CONTROL TO CHANGE HDG
585.00	595.00	10.00		3L 02	MON VERTICAL SPEED INDIC
585.00	589.92	4.92		3S 11	SET COURSE DIGITS AND POINTER ON CI USING COURSE CURSOR CONT
590.00	600.00	10.00		3R 58	MON A/C ATTITUDE RELATIVE TO ROLL COMMAND ON FDI
597.00			160034		TUNE ATLANTA TOWER -119.5
600.00			160079		MON INSTRUMENTS ON FINAL APP - P
600.00	610.00	10.00		3R 02	MONITOR LOCALIZER INDICATOR ON FDI
600.00	610.00	10.00		3S 04	MON A/C POSITION RELATIVE TO SELECTED COURSE ON CI
600.00	605.00	5.00		3R 03	MON GLIDE SLOPE ATT INDIC ON FDI
600.00	610.00	10.00		3A 10	MONITOR AIRSPEED INDIC
600.00	610.00	10.00		3H 36	MON ALTIMETER
600.00	610.00	10.00		3L 02	MON VERTICAL SPEED INDIC
607.00			160047		MON INSTRUMENTS ON FINAL APP

SINCE MISSION START		ACTIVITY TIME	EVENT/PROCEDURE TASK
BEGINNING	END		
810.00			18AA02 SELECT ALT HOLD AND AUTO APP FD MODES TO CAPTURE LOCALIZER PRIOR TO BANRR,LEVEL AT 5000 FT
810.00	812.01	2.01	3R 45 SET FD MODE SEL TO AUTO APP
813.00	814.21	1.21	3V 06 MON VOR LOC ANNUN LT AMBER
820.00	822.92	2.92	3R 41 SET FD PITCH MODE SEL TO ALT HOLD
821.00	822.21	1.21	3V 07 MON ALT HOLD ANNUN LT ON
858.00	859.21	1.21	3V 04 MON ALT HOLD ANNUN LT OFF
810.00			140003 ALTITUDE CHANGE PROC
810.00	820.00	10.00	4A 29 ACT FLT CONTROL TO CHANGE ALT
810.00	820.00	10.00	3L 02 MON VERTICAL SPEED INDIC
810.00	810.77	0.77	3H 02 MON CORR BARO ALT INDIC
810.00	820.00	10.00	3R 10 MON PITCH ATTITUDE INDIC ON FDI
810.00	812.82	2.82	4B 03 ACTUATE BOTH THROTTLES
810.00	812.37	2.37	3F 01 MON MACH NO INDIC
810.00			18BL08 LEVEL OFF AT 5000 FT BEGIN DECEL FROM 250 TO 210 KCAS
817.00			180047 MON INSTRUMENTS ON FINAL APP
820.00			18AA03 ADJUST THRUST TO DECEL TO 210 KCAS BEFORE BANRR
820.00	822.50	2.50	4B 06 SET THRUST LEVERS TO IDLE
823.00			180037 CAPTURE ILS LOC BEGIN TURN TO HDG 060
825.60	826.90	1.30	1P 02 MONITOR CALL-OUT
823.00	833.00	10.00	3R 16 MONTIOR INDICATION OF DEVIATION FROM LOCALIZER ON FDI
823.00	833.00	10.00	3S 04 MON A/C POSITION RELATIVE TO SELECTED COURSE ON CI
823.00	833.00	10.00	4A 28 ACT FLT CONTROL TO CHANGE HDG
829.53	832.40	2.87	3S 11 SET COURSE DIGITS AND POINTER ON CI USING COURSE CURSOR CONT
829.53	831.03	1.50	1P180088 CALL OUT-[I HAVE NAV 2 DATA]
827.00	828.21	1.21	3V 08 MON LOC ANNUN LT GREEN AND GLD SLP AMBER
833.00	843.00	10.00	3R 16 MONTIOR INDICATION OF DEVIATION FROM LOCALIZER ON FDI
833.00	843.00	10.00	3S 04 MON A/C POSITION RELATIVE TO SELECTED COURSE ON CI
833.00	843.00	10.00	4A 28 ACT FLT CONTROL TO CHANGE HDG
827.00			180047 MON INSTRUMENTS ON FINAL APP
837.03			180047 MON INSTRUMENTS ON FINAL APP
843.00			180043 ANNUNCIATOR RECALL
845.00			180073 CONTROL A/C ON FINAL APPROACH - C (5)

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SINCE MISSION START		ACTIVITY	EVENT/PROCEDURE		
BEGINNING	END	TIME		TASK	
645.00	650.00	5.00		4A 30	ACT FLT CONT TO ALIGNA/C WITH ATT INDICATORS
645.00			100079		MON INSTRUMENTS ON FINAL APP - F
645.00	655.00	10.00		3R 02	MONITOR LOCALIZER INDICATOR ON FDI
645.00	655.00	10.00		3S 04	MON A/C POSITION RELATIVE TO SELECTED COURSE ON CI
645.00	650.00	5.00		3R 08	MON GLIDE SLOPE ATT INDIC ON FDI
645.00	655.00	10.00		3A 10	MONITOR AIRSPEED INDIC
645.00	655.00	10.00		3H 06	MON ALTIMETER
645.00	655.00	10.00		3L 02	MON VERTICAL SPEED INDIC
647.00			100047		MON INSTRUMENTS ON FINAL APP
650.00			100073		CONTROL A/C ON FINAL APPROACH - C (5)
650.00	655.00	5.00		4A 30	ACT FLT CONT TO ALIGNA/C WITH ATT INDICATORS
655.00			100041		MON VOR/RMI-1
655.00	657.00	2.00		5G 04	MON VOR POINTER NO.1 ON VOR/RMI 1 INDIC
655.00	657.00	2.00		5G 05	MON VOR POINTER NO.2 ON VOR/RMI 1 INDIC
657.00			100042		MON ADF/RMI-1
657.00	659.00	2.00		5D 28	MON ADF POINTER NO.1 ON ADF/RMI 1 INDIC
657.00	659.00	2.00		5D 29	MON ADF POINTER NO.2 ON ADF/RMI 1 INDIC
657.00			100045		MON ADF/RMI-2
660.00			10BL09		REACH 210 KCAS
660.00			100064		ACQUIRE GLIDESLOPE
662.00	664.50	2.50		3R 09	MON INITIAL MOVEMENT OF GLIDE SLOPE COMMAND BAR ON FDI
662.80	663.80	1.00		1P 10	MONITOR CALL-OUT
664.50	665.70	1.21		3Y 09	MON GLIDE SLOPE ANNUN LT GREEN
664.00			10DL60		MONITOR ATL TOWER ON 119.5/VHF-2R
664.00			10BL10		CROSS BAKER
670.00			10DL01		LANDING CLEARANCE
670.00	671.00	1.00		1D10XX01	MON INFORMATION MANAGEMENT ATENSON
671.00	673.00	2.00		1D10XX02	MON INFORMATION MANAGEMENT DISPLAY [MODE-S UPLINK PROG] AMBER
675.40	685.40	10.00		1D10AA40	MONITOR UPLINK CALL-OUT FROM COPILOT
670.00			100072		CONTROL AIRCRAFT ON FINAL APP - B(240)
670.00	910.00	240.00		4A 30	ACT FLT CONT TO ALIGNA/C WITH ATT INDICATORS
684.00			100011		SET FLAPS TO FLAPS 1
684.00	684.70	0.70		1P100058	CALL OUT -(FLAPS 1)
689.00	689.70	0.70		1P 10	MONITOR CALL-OUT
691.00	691.44	0.44		7F 30	MON ENG NO 2 EPR IND
691.00	691.44	0.44		7F 26	MON ENG NO 1 EPR IND
670.00			100080		MON INSTRUMENTS ON FINAL APP - F

SINCE MISSION START BEGINNING	END	ACTIVITY TIME	EVENT/PROCEDURE TASK		
670.00	700.00	30.00	3R	02	MONITOR LOCALIZER INDICATOR ON FDI
670.00	700.00	30.00	3S	17	MON A/C HEADING RELATIVE TO SELECTED COURSE ON CI
670.00	700.00	30.00	3R	03	MON GLIDE SLOPE ATT INDIC ON FDI
670.00	700.00	30.00	3A	10	MONITOR AIRSPEED INDIC
670.00	700.00	30.00	3H	00	MON ALTIMETER
670.00	700.00	30.00	3L	02	MON VERTICAL SPEED INDIC
685.00			16BL11		REACH 190 KCAS
694.00			160017		SET FLAPS TO FLAPS 5
694.00	694.70	0.70	1P160001		CALL OUT -(FLAPS 5)
694.00			160018		FLAP SET PROCEDURE
700.03	700.73	0.70	1P	10	MONITOR CALL-OUT
701.00	701.44	0.44	7F	28	MON ENG NO 1 EPR IND
701.44	701.88	0.44	7F	30	MON ENG NO 2 EPR IND
699.00			030007		ENGINE INSTRUMENT SCAN
700.00			160080		MON INSTRUMENTS ON FINAL APP - P
700.00	730.00	30.00	3R	02	MONITOR LOCALIZER INDICATOR ON FDI
700.00	730.00	30.00	3S	17	MON A/C HEADING RELATIVE TO SELECTED COURSE ON CI
700.00	730.00	30.00	3R	03	MON GLIDE SLOPE ATT INDIC ON FDI
700.00	730.00	30.00	3A	10	MONITOR AIRSPEED INDIC
700.00	730.00	30.00	3H	00	MON ALTIMETER
700.00	730.00	30.00	3L	02	MON VERTICAL SPEED INDIC
708.00			16BL12		REACH 170 KCAS
710.00			160047		MON INSTRUMENTS ON FINAL APP
720.00			160047		MON INSTRUMENTS ON FINAL APP
730.00			160047		MON INSTRUMENTS ON FINAL APP
730.00			00EV21		PILOT EXT VIS SCAN
730.00	735.00	5.00	5A	10	PILOT EXTERNAL VISION SCAN
740.00			160069		SET SPEED BRAKES
740.00	743.20	3.20	4F	02	SET SPEED BRAKE LEVER TO ARM
740.00	740.73	0.73	4F	07	MONITOR SPEED BRAKE LEVER ARMED LT GREEN
744.00			160048		MON ADF/RMI-2
745.00			160080		MON INSTRUMENTS ON FINAL APP - P
745.00	775.00	30.00	3R	02	MONITOR LOCALIZER INDICATOR ON FDI
745.00	775.00	30.00	3S	17	MON A/C HEADING RELATIVE TO SELECTED COURSE ON CI
745.00	775.00	30.00	3R	03	MON GLIDE SLOPE ATT INDIC ON FDI
745.00	775.00	30.00	3A	10	MONITOR AIRSPEED INDIC
745.00	775.00	30.00	3H	00	MON ALTIMETER
745.00	775.00	30.00	3L	02	MON VERTICAL SPEED INDIC
745.00			16BL13		CROSS REIFF

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SINCE MISSION START BEGINNING	END	ACTIVITY TIME	EVENT/PROCEDURE TASK
745.00			100070 SET AUTO BRAKES
755.00			00EV01 C/P EXT VIS SCAN
765.00			100047 MON INSTRUMENTS ON FINAL APP
775.00			100047 MON INSTRUMENTS ON FINAL APP
775.00			100050 MON INSTRUMENTS ON FINAL APP - P
775.00	805.00	30.00	3R 02 MONITOR LOCALIZER INDICATOR ON FDI
775.00	805.00	30.00	3S 17 MON A/C HEADING RELATIVE TO SELECTED COURSE ON CI
775.00	805.00	30.00	3R 03 MON GLIDE SLOPE ATT INDIC ON FDI
775.00	805.00	30.00	3A 10 MONITOR AIRSPEED INDIC
775.00	805.00	30.00	3H 06 MON ALTIMETER
775.00	805.00	30.00	3L 02 MON VERTICAL SPEED INDIC
800.00			100058 REPORT RUNWAY IN SIGHT
802.00	803.00	1.00	1P 10 MONITOR CALL-OUT
805.00			00EV21 PILOT EXT VIS SCAN
805.00	810.00	5.00	8A 10 PILOT EXTERNAL VISION SCAN
808.00			100010 FLAP SET PROCEDURE
814.03	814.73	0.70	1P 10 MONITOR CALL-OUT
815.00	815.44	0.44	7F 25 MON ENG NO 1 EPR IND
815.44	815.88	0.44	7F 30 MON ENG NO 2 EPR IND
808.00			100025 SET FLAPS TO FLAPS 15
808.00	808.70	0.70	1P100082 CALL OUT -[FLAPS 15]
812.00			100042 MON ADF/RMI-1
812.00	814.00	2.00	5D 25 MON ADF POINTER NO.1 ON ADF/RMI 1 INDIC
812.00	814.00	2.00	5D 29 MON ADF POINTER NO.2 ON ADF/RMI 1 INDIC
815.00			100059 CROSS RWY 08 OUTER MARKER
815.00	815.72	0.72	2V 11 MONITOR OUTER MARKER LT ON AND AUDIBLE SIGNAL
817.00	818.80	1.80	1P100076 CALL OUT -[GEAR DOWN AND LANDING CHECK-LIST]
815.00	817.10	2.10	3H 08 START ELAPSED TIME INDIC
815.00			100L14 CROSS CATTA LOM-GEAR THEN EXTENDED AND 155 KCAS MAINTAINED
815.00			100048 MON RADIO ALTIMETER
820.00			100060 EXTEND LANDING GEAR
820.00			100050 MON INSTRUMENTS ON FINAL APP - P
820.00	850.00	30.00	3R 02 MONITOR LOCALIZER INDICATOR ON FDI
820.00	850.00	30.00	3S 17 MON A/C HEADING RELATIVE TO SELECTED COURSE ON CI
820.00	850.00	30.00	3R 03 MON GLIDE SLOPE ATT INDIC ON FDI
820.00	850.00	30.00	3A 10 MONITOR AIRSPEED INDIC
820.00	850.00	30.00	3H 06 MON ALTIMETER

SINCE MISSION START BEGINNING	END	ACTIVITY TIME	EVENT/PROCEDURE TASK
820.00	850.00	30.00	3L 02 MON VERTICAL SPEED INDIC
845.00			100062 LANDING CHECKLIST
847.00	847.60	0.60	1P 10 MONITOR CALL-OUT
847.60	848.00	0.40	1P 14 MONITOR CALL-OUT
850.00	850.70	0.70	1P 10 MONITOR CALL-OUT
851.00	852.20	1.20	1P100079 CALL OUT -[ARMED - GREEN LIGHT]
854.50	855.20	0.70	1P 10 MONITOR CALL-OUT
855.20	856.20	1.00	1P 10 MONITOR CALL-OUT
856.20	856.60	0.40	1P 14 MONITOR CALL-OUT
858.60	859.70	1.10	1P 12 MONITOR CALL-OUT
860.00			00EV21 PILOT EXT VIS SCAN
860.00	865.00	5.00	8A 10 PILOT EXTERNAL VISION SCAN
865.00			100080 MON INSTRUMENTS ON FINAL APP - P
865.00	895.00	30.00	3R 02 MONITOR LOCALIZER INDICATOR ON FDI
865.00	895.00	30.00	3S 17 MON A/C HEADING RELATIVE TO SELECTED COURSE ON CI
865.00	895.00	30.00	3R 03 MON GLIDE SLOPE ATT INDIC ON FDI
865.00	895.00	30.00	3A 10 MONITOR AIRSPEED INDIC
865.00	895.00	30.00	3H 08 MON ALTIMETER
865.00	895.00	30.00	3L 02 MON VERTICAL SPEED INDIC
865.00			00EV02 C/P EXT VIS SCAN
877.00			100047 MON INSTRUMENTS ON FINAL APP
885.00			00EV21 PILOT EXT VIS SCAN
885.00	890.00	5.00	8A 10 PILOT EXTERNAL VISION SCAN
889.00			030007 ENGINE INSTRUMENT SCAN
890.00			100080 MON INSTRUMENTS ON FINAL APP - P
890.00	920.00	30.00	3R 02 MONITOR LOCALIZER INDICATOR ON FDI
890.00	920.00	30.00	3S 17 MON A/C HEADING RELATIVE TO SELECTED COURSE ON CI
890.00	920.00	30.00	3R 03 MON GLIDE SLOPE ATT INDIC ON FDI
890.00	920.00	30.00	3A 10 MONITOR AIRSPEED INDIC
890.00	920.00	30.00	3H 08 MON ALTIMETER
890.00	920.00	30.00	3L 02 MON VERTICAL SPEED INDIC
895.00			100049 MON RADIO ALTIMETER
900.00			00EV04 C/P EXT VIS SCAN
923.00			100065 DESCEND THRU -DECISION HEIGTH
923.50	924.30	0.80	1P 11 MONITOR CALL-OUT
924.00			100066 CONTROL AIRCRAFT THRU TOUCHDOWN
924.00	950.00	26.00	8A 08 CAPT VIEW THRU NO.1 WINDOW
924.00	950.00	26.00	4A 08 MANUALLY CONT A/C
925.00			100064 CROSS RWY 08 MIDDLE MARKER

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SINCE MISSION START		ACTIVITY TIME	EVENT/PROCEDURE		
BEGINNING	END		TASK		
925.00	926.91	1.91	5V	13	MONITOR MIDDLE MARKER ANNUN LT ON AND AUDIBLE SIGNAL
928.00			10DL15		CROSS MIDDLE MARKER
930.00			00EV02		C/P EXT VIS SCAN
930.00			000003		FLIGHT INSTRUMENT SCAN - A
930.00	940.00	10.00	3R	10	MON PITCH ATTITUDE INDIC ON FDI
930.00	940.00	10.00	3L	02	MON VERTICAL SPEED INDIC
930.00	940.00	10.00	3A	10	MONITOR AIRSPEED INDIC
930.00	940.00	10.00	3S	01	MONITOR A/C HEADING RELATIVE TO SELECTED HDG ON CI
940.00			100047		MON INSTRUMENTS ON FINAL APP
941.00			10DL16		CROSS RW THRESHOLD
950.00			00EV02		C/P EXT VIS SCAN
950.00			100008		TOUCHDOWN
950.00	952.50	2.50	4B	00	SET THRUST LEVERS TO IDLE
950.00	1025.00	75.00	4A	31	MANUALLY CONTROL A/C
952.50	973.50	21.00	4C	01	SET THRUST REVERSER LEVERS TO ON
974.00	976.70	2.70	4C	02	SET THRUST REVERSER LEVERS TO OFF
978.00	981.20	3.20	4F	01	SET SPD BRAKE LEVER TO DOWN
950.00	1025.00	75.00	4M	04	ACTUATE NOSE GEAR STEERING USING RUDDER PEDALS
950.00	1025.00	75.00	6A	01	VIEW RUNWAY AHEAD
950.00			10DL17		TOUCHDOWN
950.00			000003		FLIGHT INSTRUMENT SCAN - A
950.00	960.00	10.00	3R	10	MON PITCH ATTITUDE INDIC ON FDI
950.00	960.00	10.00	3L	02	MON VERTICAL SPEED INDIC
950.00	960.00	10.00	3A	10	MONITOR AIRSPEED INDIC
950.00	960.00	10.00	3S	01	MONITOR A/C HEADING RELATIVE TO SELECTED HDG ON CI
960.00			100047		MON INSTRUMENTS ON FINAL APP
970.00			00EV02		C/P EXT VIS SCAN
970.00			000003		FLIGHT INSTRUMENT SCAN - A
970.00	980.00	10.00	3R	10	MON PITCH ATTITUDE INDIC ON FDI
970.00	980.00	10.00	3L	02	MON VERTICAL SPEED INDIC
970.00	980.00	10.00	3A	10	MONITOR AIRSPEED INDIC
970.00	980.00	10.00	3S	01	MONITOR A/C HEADING RELATIVE TO SELECTED HDG ON CI
984.00			10DL71		HANDOFF TO GROUND
984.00	985.80	1.80	1D10XX01		MON INFORMATION MANAGEMENT ATENSON
985.00	987.00	2.00	1D10XX02		MON INFORMATION MANAGEMENT DISPLAY (MODE-S UPLINK PNDG) AMBER

```
SINCE MISSION START        ACTIVITY                                     EVENT/PROCEDURE
BEGINNING      END         TIME                                            TASK
  989.40       997.40        8.00                                            1D16AA07   MONITOR UPLINK CALL-
                                                                                        OUT FROM COPILOT
  990.00                                                                 090003   FLIGHT INSTRUMENT
                                                                                  SCAN - A
  990.00      1000.00       10.00                                            3R    10   MON PITCH ATTITUDE
                                                                                        INDIC ON FDI
  990.00      1000.00       10.00                                            3L    02   MON VERTICAL SPEED
                                                                                        INDIC
  990.00      1000.00       10.00                                            3A    10   MONITOR AIRSPEED
                                                                                        INDIC
  990.00      1000.00       10.00                                            3S    01   MONITOR A/C HEADING
                                                                                        RELATIVE TO SELECTED
                                                                                        HDG ON CI
 1000.00                                                                 10DL72   TUNE AND MONITOR ATL
                                                                                  GRND ON 121.9/VHF-2L
 1009.00                                                                 10DL73   TAXI CLEARANCE FROM
 1009.00      1010.60        1.60                                            1D16XX01   MON INFORMATION
                                                                                        MANAGEMENT
                                                                                        ATENSON
 1010.60      1012.60        2.00                                            1D16XX02   MON INFORMATION
                                                                                        MANAGEMENT DISPLAY
                                                                                        [MODE-S UPLINK PNDG]
                                                                                        AMBER
 1014.40      1019.40        5.00                                            1D16AA08   MONITOR UPLINK CALL-
                                                                                        OUT FROM COPILOT
 1020.00                                                                 00EV01   C/P EXT VIS SCAN
```

B.2 NORMAL ILS APPROACH—CONVENTIONAL FLIGHT DECK

Nonflying Pilot

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                                                                                     NOV10 1980
****************                  ****************************************
* UNSHIFTED    *                  *         MISSION SCENARIO REPORT      *
****************                  *                                      *
                                  * MISSION - CURRENT NAS                *
                                  *           ILS AP-BASE LN.            *
                                  *                                      *
                                  * CONFIGURATION - 737 CONVNT FLT DCK   *
                                  *                                      *
                                  * CREWMEMBER - COPILOT                 *
                                  ****************************************

                                                                   FLIGHT PHASE
TIME INTERVAL (SECS)              TOTAL                               EVENT/PROCEDURE
SINCE MISSION START               ACTIVITY                               TASK
BEGINNING          END            TIME
                                                                   10BL BASELINE FFD ILS APP
   0.00
   0.00                                                               10BL01   CROSS LOGEN INTERSEC
                                                                               TION AT 250 KCAS AND
                                                                               14000 FEET.ATL CENTR
                                                                               HAS PREVIOUSLY INSTR
                                                                               UCTED NASA 515 TO
                                                                               CONTACT ATL APPR AT
                                                                               LOGEN.VHF-2R HAS AL-
                                                                               READY BEEN TUNED TO
                                                                               CORRECT FREQ-120.9.

   0.00                                                               100090   CONTACT ATL APPROACH
                                                                               ON 120.9

   0.00            1.40            1.40                                  1B     08   SET VHF-2 COMM TFR
                                                                                    SW TO RIGHT

   2.40            9.40            7.00                                  1A     28   ACTUATE COMM 2 PUSH-
                                                                                    TO-TALK SW

   2.40            9.40            7.00                                  1P10XX90   ATL APP,NASA 515 DES
                                                                                    CENDING TO 11000 FT
                                                                                    WITH INFO LIMA.

   9.40           13.40            4.00                                  1P10YY90   NASA 515,ATL APPR,
                                                                                    ROGER.

   0.00                                                               140003   ALTITUDE CHANGE PROC

  10.00                                                               080039   FLIGHT INSTRUMENT
                                                                               SCAN - F

  15.00                                                               100013   SET NAV-1 TO RUNWAY
                                                                               8L ILS -109.3

  15.00           21.00            6.00                                  8B  .  00   RETREIVE CHARTS

  21.00           26.00            5.00                                  8B100003   REVIEW CHARTS TO
                                                                                   DETERMINE RUNWAY 08
                                                                                   ILS FREQ AND REG VOR
                                                                                   FREQ

  26.00           31.00            5.00                                  8U     01   MON NAV-1 FREQ INDIC

  26.00           29.00            3.00                                  8U     02   SET NAV-1 FREQ -
                                                                                    WHOLE NO.S

  29.00           31.00            2.00                                  8U     03   SET NAV-1 FREQ -
                                                                                    FRACTIONS

  31.50           34.40            2.90                                  1P100050   CALL OUT -[RUNWAY 8L
                                                                                    ILS IS ON NAV 1]

  31.50           33.77            2.27                                  8H     02   MON VOR POINTER NO.1
                                                                                    ON VOR/RMI 2 INDIC

  15.00                                                               00EV30   PILOT EXT VIS SCAN

  38.00                                                               100039   SET ADF-1 TO CATTA
                                                                                     -375KC

  38.00           41.00            3.00                                  8D     17   SET ADF NO.1 BFO SW
                                                                                    TO OFF

  41.00           41.77            0.77                                  8D     22   MON ADF NO.1 TUNING
                                                                                    METER INDIC

  41.77           43.75            1.98                                  8D     01   MONITOR ADF NO 1
                                                                                    FREQ INDIC

  43.75           45.73            1.98                                  8D     02   SELECT ADF NO 1 FREQ
                                                                                    INDIC

  45.73           47.23            1.50                                  1P100065   CALL OUT -[CATTA
                                                                                    ON ADF-1]

  49.00                                                               100040   SET ADF-2 TO FLANC
                                                                                     -344

  49.00           51.00            2.00                                  8E     17   SEL ADF NO.2 FREQ
                                                                                    BAND .19-.40

  52.00           53.98            1.98                                  8E     01   MON ADF NO 2  FREQ.
                                                                                    INDIC

  52.00           53.98            1.98                                  8E     02   SELECT ADF NO 2 FREQ
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SINCE MISSION START BEGINNING	END	ACTIVITY TIME	EVENT/PROCEDURE TASK
52.00	54.28	2.28	5E 20 MON ADF NO.2 TUNING METER INDIC
54.00	55.50	1.50	1P160066 CALL OUT -[PLANC ON ADF-2]
58.00			160038 SET DECISION HEIGTH ON RADIO ALTIMETER
64.00			030007 ENGINE INSTRUMENT SCAN
64.00	64.44	0.44	7F 25 MON ENG NO 1 EPR IND
64.00	64.44	0.44	7F 30 MON ENG NO 2 EPR IND
64.44	64.88	0.44	7F 21 MON NO 1 ENG N1 IND
64.44	64.88	0.44	7F 22 MON NO 2 ENG N1 IND
64.88	65.32	0.44	7F 31 MON ENG NO 1 EXH GAS TEMP IND
64.88	65.32	0.44	7F 32 MON ENG NO 2 EXH GAS TEMP IND
65.32	65.76	0.44	7F 23 MON NO 1 ENG N2 IND
65.32	65.76	0.44	7F 24 MON NO 2 ENG N2 IND
65.76	66.20	0.44	7F 33 MON ENG NO 1 FUEL FLOW INDIC
65.76	66.20	0.44	7F 34 MON ENG NO 2 FUEL FLOW INDIC
66.20	66.64	0.44	7F 09 MON NO 1 ENG OIL PRESS INDIC
66.64	67.08	0.44	7F 10 MON NO 1 ENG OIL TEMP INDIC
66.64	67.08	0.44	7F 18 MON NO 2 ENG OIL TEMP INDIC
67.08	67.52	0.44	7F 11 MON NO 1 ENG OIL QTY INDIC
67.08	67.52	0.44	7F 19 MON NO 2 ENG OIL QTY INDIC
67.52	67.96	0.44	7F 12 MON NO 1 ENG VIBRATION AMPLITUDE INDIC
67.52	67.96	0.44	7F 20 MON NO 2 ENG VIBR AMPLITUDE INDIC
68.00			18AA01 ADJUST THRUST AND PITCH TO MAINTAIN A 900 FPM DESCENT AT 250 KCAS USING PITCH CWS MODE OF A.P. PILOT HAS DETERMINED THAT THIS SHOULD PERMIT DECEL TO 210 FOR CROSSING BAHRA AT 6000 FT.
70.00			160005 DESCENT AND APPROACH CHECKLIST - 1
70.00	72.00	2.00	1P 02 MONITOR CALL-OUT
72.00	77.90	5.90	8B 02 RETREIVE CHECKLIST
78.00	83.00	5.00	8B 08 FIND CHECKLIST IN HANDBOOK
83.00	35.00	2.00	8B 03 READ NEXT ITEM ON CHECKLIST
85.00	86.00	1.00	1P160044 CALL OUT-[ANTI-ICE]
87.00	87.80	0.80	1P160045 CALL OUT-[NOT REQD]
88.00	90.00	2.00	8B 03 READ NEXT ITEM ON CHECKLIST
90.00	91.80	1.80	1P160046 CALL OUT -[AIR CONDITIONING AND PRESSURIZATION]
92.00	94.07	2.07	7D 69 MON PASS CAB TEMP CONT SETTING
94.07	96.09	2.02	7D 70 MON CONT CAB TEMP CONT SETTING
96.63	97.80	1.17	7E 08 MON LDG ALT CNTR
98.00	98.40	0.40	1P160047 CALL OUT [SET]
70.00			90EV33 PILOT EXT VIS SCAN

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SINCE MISSION START BEGINNING	END	ACTIVITY TIME	EVENT/PROCEDURE TASK
100.00			160006 DESCENT AND APPROACH CHECKLIST - 2
100.00	102.00	2.00	6B 03 READ NEXT ITEM ON CHECKLIST
102.00	102.90	0.90	1P160048 CALL OUT-[START SWITCHES]
108.50	109.00	0.50	1P 06 MONITOR REPORT
109.00	111.00	2.00	6B 03 READ NEXT ITEM ON CHECKLIST
111.00	112.10	1.10	1P160050 CALL OUT-[INBOARD LANDING LIGHTS]
112.00	114.20	2.20	7G 17 SET LANDING LIGHTS SW TO ON
114.20	114.50	0.30	1P160051 CALL OUT -[ON]
114.50	116.50	2.00	6B 03 READ NEXT ITEM ON CHECKLIST
116.50	117.90	1.40	1P160052 CALL OUT -[ALTIMETER AND INSTRUMENTS]
118.00	120.37	2.37	3H 02 MON CORR BARO ALT INDIC
120.37	123.37	3.00	3H 06 F.O. CHECK CAPT<S ALTIMETER BARO SET AND INDICATED ALTITUDE
123.40	124.70	1.30	1P160053 CALL OUT-[SET AND CROSSCHECKED]
126.00			160007 DESCENT AND APPROACH CHECKLIST - 3
126.00	128.00	2.00	6B 03 READ NEXT ITEM ON CHECKLIST
128.00	129.50	1.50	1P160054 CALL OUT-[EPR AND IAS BUGS]
126.00	131.00	5.00	6B010004 RETREIVE FLIGHT PLANNING REF. DATA MANUAL
131.00	136.00	5.00	6B160001 DETERMINE GO-AROUND EPR BUG SET VALUE
136.00	138.32	2.32	7F 26 SET ENG NO 1 EPR BUG
136.32	138.32	2.00	7F 27 MON ENG NO 1 EPR BUG
138.32	140.64	2.32	7F 28 SET ENG NO 2 EPR BUG
138.64	140.64	2.00	7F 29 MON ENG NO 2 EPR BUG
141.00	146.00	5.00	6B160002 DETERMINE LANDING V-REF BUG SET VALUE
146.00	148.57	2.57	3A 07 MON V-REF BUG SETTING
146.00	148.57	2.57	3A 06 SET V-REF BUG
146.00	147.90	1.90	1P160055 CALL OUT -[V-REF IS XXX KNOTS]
151.00	154.00	3.00	3A 12 F.O. CHECK CAPTIS V-REF BUG SETTING
154.00	155.80	1.80	1P160056 CALL OUT -[BUGS SET AND CROSS-CHECKED]
155.60	157.60	2.00	6B 03 READ NEXT ITEM ON CHECKLIST
155.60	156.90	1.30	1P160057 CALL OUT -[CHECKLIST COMPLETED]
157.60	160.60	3.00	6B 06 STOW CHECKLIST
160.60	162.60	2.00	6B010005 STOW FLIGHT PLANNING REF. DATA MANUAL
130.00			030018 FLIGHT INSTRUMENT SCAN - D
165.00			030007 ENGINE INSTRUMENT SCAN
165.00	165.44	0.44	7F 25 MON ENG NO 1 EPR IND
165.00	165.44	0.44	7F 30 MON ENG NO 2 EPR IND
165.44	165.88	0.44	7F 21 MON NO 1 ENG N1 IND
165.44	165.88	0.44	7F 22 MON NO 2 ENG N1 IND

SINCE MISSION START BEGINNING	END	ACTIVITY TIME	EVENT/PROCEDURE TASK
165.88	166.32	0.44	7F 31 MON ENG NO 1 EXH GAS TEMP IND
165.88	166.32	0.44	7F 32 MON ENG NO 2 EXH GAS TEMP IND
166.32	166.76	0.44	7F 23 MON NO 1 ENG N2 IND
166.32	166.76	0.44	7F 24 MON NO 2 ENG N2 IND
166.76	167.20	0.44	7F 33 MON ENG NO 1 FUEL FLOW INDIC
166.76	167.20	0.44	7F 34 MON ENG NO 2 FUEL FLOW INDIC
167.20	167.64	0.44	7F 09 MON NO 1 ENG OIL PRESS INDIC
167.64	168.08	0.44	7F 10 MON NO 1 ENG OIL TEMP INDIC
167.64	168.08	0.44	7F 18 MON NO 2 ENG OIL TEMP INDIC
168.08	168.52	0.44	7F 11 MON NO 1 ENG OIL QTY INDIC
168.08	168.52	0.44	7F 19 MON NO 2 ENG OIL QTY INDIC
168.52	168.96	0.44	7F 12 MON NO 1 ENG VIBRATION AMPLITUDE INDIC
168.52	168.96	0.44	7F 20 MON NO 2 ENG VIBR AMPLITUDE INDIC
150.00			00EV05 C/P EXT VIS SCAN
150.00	175.00	25.00	8A 11 PILOT EXTERNAL VISION SCAN
195.00			180048 MON ADF/RMI-2
195.00	197.28	2.28	6E 28 MON ADF NO.1 POINTER ON ADF/RMI 2 INDIC
195.00			180091 HANDOFF TO ATL FINAL APPROACH CONTROLLER
195.00	207.00	12.00	1P16XX01 N 515,TURN RT HDG270 DESCND AND MAINTAIN 6000 FT,CONTACT ATL APPR ON 127.25.
207.00	214.00	7.00	1A 25 ACTUATE COMM 2 PUSH-TO-TALK SW
207.00	214.00	7.00	1P16YY01 515,ROGER,HDG 270, MAINTAIN 6000,APPR ON 127.25.
209.00			140007 HEADING CHANGE PROC.
209.00			16BL02 BEGIN TURN TO DOWN-WIND LEG
210.00			16BL03 DESCEND THRU 11000.
215.00			16AA01 ADJUST THRUST AND PITCH TO MAINTAIN A 900 FPM DESCENT AT 250 KCAS USING PITCH CWS MODE OF A.P. PILOT HAS DETERMINED THAT THIS SHOULD PERMIT DECEL TO 210 FOR CROSSING BAWRR AT 6000 FT.
219.00			180092 TUNE ATL APPROACH ON 127.25
219.00	223.88	4.88	1B 01 MON VHF-2L FREQ IND
219.00	221.90	2.90	1B 02 SET VHF-2L FREQ-WHOLE NO.S
221.90	223.88	1.98	1B 03 SET VHF-2L FREQ - FRACTIONS
226.00			180093 CONTACT ATL APPROACH ON 127.25
226.00	227.40	1.40	1B 05 SET VHF-2 COMM TFR SW TO LEFT
227.40	231.00	3.60	1A 18 ACT PUSH-TO-TALK SW
227.40	231.00	3.60	1P16XX02 ATL APPR,NASA 515 DESCENDING TO 6000.
231.00	235.00	4.00	1P16YY02 NASA 515,ATL APPR, ROGER.

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SINCE MISSION START		ACTIVITY TIME	EVENT/PROCEDURE TASK		
BEGINNING	END				
220.00			000017		FLIGHT INSTRUMENT SCAN - C
240.00			00EV09		C/P EXT VIS SCAN
240.00	285.00	45.00	8A	12	PILOT EXTERNAL VISION SCAN
250.00			000039		FLIGHT INSTRUMENT SCAN - ?
288.00			020007		ENGINE INSTRUMENT SCAN
288.00	288.44	0.44	7F	29	MON ENG NO 1 EPR IND
288.00	288.44	0.44	7F	30	MON ENG NO 2 EPR IND
288.44	288.88	0.44	7F	21	MON NO 1 ENG N1 IND
288.44	288.88	0.44	7F	22	MON NO 2 ENG N1 IND
288.88	289.32	0.44	7F	31	MON ENG NO 1 EXH GAS TEMP IND
288.88	289.32	0.44	7F	32	MON ENG NO 2 EXH GAS TEMP IND
289.32	289.76	0.44	7F	23	MON NO 1 ENG N2 IND
289.32	289.76	0.44	7F	24	MON NO 2 ENG N2 IND
289.76	290.20	0.44	7F	33	MON ENG NO 1 FUEL FLOW INDIC
289.76	290.20	0.44	7F	34	MON ENG NO 2 FUEL FLOW INDIC
290.20	290.64	0.44	7F	09	MON NO 1 ENG OIL PRESS INDIC
290.64	291.08	0.44	7F	10	MON NO 1 ENG OIL TEMP INDIC
290.64	291.08	0.44	7F	18	MON NO 2 ENG OIL TEMP INDIC
291.08	291.52	0.44	7F	11	MON NO 1 ENG OIL QTY INDIC
291.08	291.52	0.44	7F	19	MON NO 2 ENG OIL QTY INDIC
291.52	291.96	0.44	7F	12	MON NO 1 ENG VIBRATION AMPLITUDE INDIC
291.52	291.96	0.44	7F	20	MON NO 2 ENG VIBR AMPLITUDE INDIC
295.00			00EV09		C/P EXT VIS SCAN
295.00	340.00	45.00	5A	12	PILOT EXTERNAL VISION SCAN
330.00			10AA01		ADJUST THRUST AND PITCH TO MAINTAIN A 900 FPM DESCENT AT 250 KCAS USING PITCH CWS MODE OF A.P. PILOT HAS DETERMINED THAT THIS SHOULD PERMIT DECEL TO 210 FOR CROSSING BANRR AT 6000 FT.
340.00			00EV04		C/P EXT VIS SCAN
340.00	360.00	20.00	8A	10	PILOT EXTERNAL VISION SCAN
363.00			030007		ENGINE INSTRUMENT SCAN
363.00	363.44	0.44	7F	29	MON ENG NO 1 EPR IND
363.00	363.44	0.44	7F	30	MON ENG NO 2 EPR IND
363.44	363.88	0.44	7F	21	MON NO 1 ENG N1 IND
363.44	363.88	0.44	7F	22	MON NO 2 ENG N1 IND
363.88	364.32	0.44	7F	31	MON ENG NO 1 EXH GAS TEMP IND
363.88	364.32	0.44	7F	32	MON ENG NO 2 EXH GAS TEMP IND
364.32	364.76	0.44	7F	23	MON NO 1 ENG N2 IND
364.32	364.76	0.44	7F	24	MON NO 2 ENG N2 IND
364.76	365.20	0.44	7F	33	MON ENG NO 1 FUEL FLOW INDIC

SINCE MISSION START BEGINNING	END	ACTIVITY TIME	EVENT/PROCEDURE TASK
364.76	365.20	0.44	7F 34 MON ENG NO 2 FUEL FLOW INDIC
365.20	365.64	0.44	7F 09 MON NO 1 ENG OIL PRESS INDIC
365.64	366.08	0.44	7F 10 MON NO 1 ENG OIL TEMP INDIC
365.64	366.08	0.44	7F 18 MON NO 2 ENG OIL TEMP INDIC
366.08	366.52	0.44	7F 11 MON NO 1 ENG OIL QTY INDIC
366.08	366.52	0.44	7F 19 MON NO 2 ENG OIL QTY INDIC
366.52	366.96	0.44	7F 12 MON NO 1 ENG VIBRATION AMPLITUDE INDIC
366.52	366.96	0.44	7F 20 MON NO 2 ENG VIBR AMPLITUDE INDIC
370.00			16BL04 DESCEND THRU 8000.
370.00			160094 ALTITUDE STEP DOWN FROM ATL APPROACH
370.00	375.00	5.00	1P16XX04 NASA 515,DESCEND AND MAINTAIN 6000 FT.
375.00	378.50	3.50	1A 10 ACT PUSH-TO-TALK SW
375.00	378.50	3.50	1P16YY04 515,ROGER,MAINTAIN 6000.
370.00			090039 FLIGHT INSTRUMENT SCAN - F
385.00			00EV06 C/P EXT VIS SCAN
385.00	425.00	40.00	8A 11 PILOT EXTERNAL VISION SCAN
430.00			030007 ENGINE INSTRUMENT SCAN
430.00	430.44	0.44	7F 29 MON ENG NO 1 EPR IND
430.00	430.44	0.44	7F 30 MON ENG NO 2 EPR IND
430.44	430.88	0.44	7F 21 MON NO 1 ENG N1 IND
430.44	430.88	0.44	7F 22 MON NO 2 ENG N1 IND
430.88	431.32	0.44	7F 31 MON ENG NO 1 EXH GAS TEMP IND
430.88	431.32	0.44	7F 32 MON ENG NO 2 EXH GAS TEMP IND
431.32	431.76	0.44	7F 23 MON NO 1 ENG N2 IND
431.32	431.76	0.44	7F 24 MON NO 2 ENG N2 IND
431.76	432.20	0.44	7F 33 MON ENG NO 1 FUEL FLOW INDIC
431.76	432.20	0.44	7F 34 MON ENG NO 2 FUEL FLOW INDIC
432.20	432.64	0.44	7F 09 MON NO 1 ENG OIL PRESS INDIC
432.64	433.08	0.44	7F 10 MON NO 1 ENG OIL TEMP INDIC
432.64	433.08	0.44	7F 18 MON NO 2 ENG OIL TEMP INDIC
433.08	433.52	0.44	7F 11 MON NO 1 ENG OIL QTY INDIC
433.08	433.52	0.44	7F 19 MON NO 2 ENG OIL QTY INDIC
433.52	433.96	0.44	7F 12 MON NO 1 ENG VIBRATION AMPLITUDE INDIC
433.52	433.96	0.44	7F 20 MON NO 2 ENG VIBR AMPLITUDE INDIC
440.00			00EV03 C/P EXT VIS SCAN
440.00	455.00	15.00	8A 10 PILOT EXTERNAL VISION SCAN
450.00			160002 TUNE ATIS -119.65
450.00	454.90	4.90	1A 07 MON VHF-1R FREQ IND

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SINCE MISSION START BEGINNING	END	ACTIVITY TIME	EVENT/PROCEDURE TASK
450.00	452.01	2.01	1A 06 SET VHF-1R FREQ. WHOLE NO.S FRACTIONS
455.00	457.39	2.39	1A 08 SET VHF-1 COMM TFR SW TO RIGHT
456.43	457.95	1.52	1A 17 SET COMM 2 VHF-1 COMM RECVR SW TO ON
458.00	482.00	24.00	1A 15 MON VHF-1 COMM AUDIO
458.00	461.42	3.42	1P160001 MON RADIO COMM - [INFORMATION LIMA ONE SEVEN ZERO FIVE OBSERVATION- TWO
461.42	465.98	4.56	1P160002 FIVE HUNDRED SCATTERED CEILING FOUR THOUSAND BROKEN. VISIBILITY ONE SIX.
465.98	470.54	4.56	1P160003 TEMPERATURE FIVE NINER. WIND ONE ONE ZERO DEGREES AT TEN GUSTING TO ONE SEVEN
470.54	475.10	4.56	1P160004 . ALTIMETER TWO - NINER EIGHT FOUR. SIMULTANEOUS PARALLEL APPROACHES IN
475.10	479.66	4.56	1P160005 OPERATION ON RUNWAYS EIGHT LEFT AND NINER RIGHT. ADVISE CONTROLLER ON INITIAL
479.66	481.94	2.28	1P160006 CONTACT YOU HAVE INFORMATION LIMA.]
480.00			160048 MON ADF/RMI-2
480.00	482.28	2.28	5E 26 MON ADF NO.1 POINTER ON ADF/RMI 2 INDIC
480.00			16BL05 CROSS PT NDB
465.00			00EV05 C/P EXT VIS SCAN
465.00	510.00	45.00	8A 12 PILOT EXTERNAL VISION SCAN
470.00			16AA01 ADJUST THRUST AND PITCH TO MAINTAIN A 500 FPM DESCENT AT 250 KCAS USING PITCH CWS MODE OF A.P. PILOT HAS DETERMINED THAT THIS SHOULD PERMIT DECEL TO 210 FOR CROSSING BAKRR AT 6000 FT.
480.00			160003 SET ALTIMETER BARO SETTING TO 29.84
480.00	482.00	2.00	1P160043 CALL OUT-[DESCENT AND APPROACH CHECKLIST]
484.00			140032 ALTIMETER BARO SET PROC.
484.00	486.65	2.65	3H 04 MONITOR ALTIMETER BARO SETTING INDIC
484.00	486.65	2.65	3H 03 SET ALTIMETER BARO SETTING CONTROL
490.00			000017 FLIGHT INSTRUMENT SCAN - C
513.00			030007 ENGINE INSTRUMENT SCAN
513.00	513.44	0.44	7F 25 MON ENG NO 1 EPR IND
513.00	513.44	0.44	7F 20 MON ENG NO 2 EPR IND
513.44	513.88	0.44	7F 21 MON NO 1 ENG N1 IND
513.44	513.88	0.44	7F 22 MON NO 2 ENG N1 IND
513.88	514.32	0.44	7F 31 MON ENG NO 1 EXH GAS TEMP IND
513.88	514.32	0.44	7F 34 MON ENG NO 2 EXH GAS TEMP IND
514.32	514.76	0.44	7F 23 MON NO 1 ENG N2 IND

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SINCE MISSION START           ACTIVITY                      EVENT/PROCEDURE
BEGINNING        END          TIME                              TASK

514.32       514.76           0.44                              7F    24   MON NO 2 ENG N2 IND

514.76       515.20           0.44                              7F    03   MON ENG NO 1 FUEL
                                                                          FLOW INDIC

514.76       515.20           0.44                              7F    04   MON ENG NO 2 FUEL
                                                                          FLOW INDIC

515.20       515.64           0.44                              7F    09   MON NO 1 ENG OIL
                                                                          PRESS INDIC

515.64       516.08           0.44                              7F    10   MON NO 1 ENG OIL
                                                                          TEMP INDIC

515.64       516.08           0.44                              7F    18   MON NO 2 ENG OIL
                                                                          TEMP INDIC

516.08       516.52           0.44                              7F    11   MON NO 1 ENG OIL QTY
                                                                          INDIC

516.08       516.52           0.44                              7F    19   MON NO 2 ENG OIL
                                                                          QTY INDIC

516.52       516.96           0.44                              7F    12   MON NO 1 ENG VIBRA-
                                                                          TION AMPLITUDE INDIC

516.52       516.96           0.44                              7F    20   MON NO 2 ENG VIBR
                                                                          AMPLITUDE INDIC

519.00                                                      100041   MON VOR/RMI-1

520.00                                                      100006   VECTOR FOR BASE LEG
                                                                     FROM ATL APPROACH

520.00       525.00           5.00                              1P10XX06   NASA 516,TURN LEFT
                                                                          HEADING 180.

525.00       528.50           3.50                              1A    10   ACT PUSH-TO-TALK SW

525.00       528.50           3.50                              1P10YY06   516,ROGER,HEADING
                                                                          180.

523.00                                                      140007   HEADING CHANGE PROC.

523.00                                                      10BL06   BEGIN TURN TO BASE

533.00                                                      140007   HEADING CHANGE PROC.

540.00                                                      140023   REPORT 1000 FT TO
                                                                     LEVEL OFF

540.00       542.13           2.13                              3H    02   MON CORR BARO ALT
                                                                          INDIC

542.00       543.70           1.70                              1P140046   CALL OUT -[1000 FEET
                                                                          TO LEVEL OFF]

543.00                                                      140007   HEADING CHANGE PROC.

550.00                                                      00EV03   C/P EXT VIS SCAN

550.00       565.00          15.00                              9A    10    PILOT  EXTERNAL
                                                                          VISION SCAN

555.00                                                      000003   FLIGHT INSTRUMENT
                                                                     SCAN - A

565.00                                                      100041   MON VOR/RMI-1

569.00                                                      100042   MON ADF/RMI-1

570.00                                                      100008   VECTOR TO INTERCEPT
                                                                     AND FINAL APPROACH
                                                                     CLEARANCE FROM ATL
                                                                     APPROACH CONTROL

570.00       580.00          10.00                              1P10XX08   NASA 516,12 MILES
                                                                          FROM OM,TURN LT HDG
                                                                          110,MAINTAIN 5000 FT
                                                                          UNTIL CROSSING BAHRR

587.00       594.00           7.00                              1A    25   ACTUATE COMM 2 PUSH-
                                                                          TO-TALK SW

587.00       594.00           7.00                              1P10YY08   516 ROGER,CLEARED
                                                                          FOR ILS 8 LEFT APPR,
                                                                          TOWER AT BAHRR.

580.00       587.00           7.00                              1P10ZZ08   CLEARED FOR ILS RUN-
                                                                          WAY 8 LEFT APPROACH.
                                                                          CONTACT TOWER ON
                                                                          119.5 AT BAHRR.

575.00                                                      140007   HEADING CHANGE PROC.

575.00                                                      10BL07   TURN TO INTERCEPT
                                                                     FINAL APPR. COURSE

585.00                                                      140007   HEADING CHANGE PROC.

597.00                                                      100034   TUNE ATLANTA TOWER
                                                                     -119.5
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SINCE MISSION START BEGINNING	END	ACTIVITY TIME	EVENT/PROCEDURE	TASK	
597.00	601.00	4.00	1B	07	MON VHF-2R FREQ IND
597.00	599.00	2.00	1B	06	SET VHF-2R FREQ - WHOLE NO.S
599.00	601.00	1.00	1B	09	SET VHF-2R FREQ - FRACTIONS
600.00			160079		MON INSTRUMENTS ON FINAL APP - P
607.00			160047		MON INSTRUMENTS ON FINAL APP
607.00	617.00	10.00	3R	02	MONITOR LOCALIZER INDICATOR ON FDI
607.00	617.00	10.00	3S	04	MON A/C POSITION RELATIVE TO SELECTED COURSE ON CI
607.00	617.00	10.00	3R	03	MON GLIDE SLOPE ATT INDIC ON FDI
607.00	617.00	10.00	3A	10	MONITOR AIRSPEED INDIC
607.00	617.00	10.00	3H	06	MON ALTIMETER
607.00	617.00	10.00	3L	02	MON VERTICAL SPEED INDIC
610.00			16AA02		SELECT ALT HOLD AND AUTO APP FD MODES TO CAPTURE LOCALIZER PRIOR TO BANKR,LEVEL AT 5000 FT
610.00			140003		ALTITUDE CHANGE PROC
610.00			16BL06		LEVEL OFF AT 5000 FT BEGIN DECEL FROM 250 TO 210 KCAS
617.00			160047		MON INSTRUMENTS ON FINAL APP
617.00	627.00	10.00	3R	02	MONITOR LOCALIZER INDICATOR ON FDI
617.00	627.00	10.00	3S	04	MON A/C POSITION RELATIVE TO SELECTED COURSE ON CI
617.00	627.00	10.00	3R	03	MON GLIDE SLOPE ATT INDIC ON FDI
617.00	627.00	10.00	3A	10	MONITOR AIRSPEED INDIC
617.00	627.00	10.00	3H	06	MON ALTIMETER
617.00	627.00	10.00	3L	02	MON VERTICAL SPEED INDIC
620.00			16AA03		ADJUST THRUST TO DECEL TO 210 KCAS BEFORE BANKR
623.00			169037		CAPTURE ILS LOC BEGIN TURN TO HDG 090
623.00	625.53	2.53	3R	59	MON INITIAL MOVEMENT OF ROLL COMMAND BAR ON FDI
625.50	626.80	1.30	1P100067		CALL OUT -[LOCALIZER ALIVE]
629.50	631.50	2.00	1P	02	MONITOR CALL-OUT
627.00			160047		MON INSTRUMENTS ON FINAL APP
627.00	637.00	10.00	3R	02	MONITOR LOCALIZER INDICATOR ON FDI
627.00	637.00	10.00	3S	04	MON A/C POSITION RELATIVE TO SELECTED COURSE ON CI
627.00	637.00	10.00	3R	03	MON GLIDE SLOPE ATT INDIC ON FDI
627.00	637.00	10.00	3A	10	MONITOR AIRSPEED INDIC
627.00	637.00	10.00	3H	06	MON ALTIMETER
627.00	637.00	10.00	3L	02	MON VERTICAL SPEED INDIC

SINCE MISSION START		ACTIVITY TIME	EVENT/PROCEDURE TASK
BEGINNING	END		
637.00			160047 MON INSTRUMENTS ON FINAL APP
637.00	647.00	10.00	3R 02 MONITOR LOCALIZER INDICATOR ON FDI
637.00	647.00	10.00	3S 04 MON A/C POSITION RELATIVE TO SELECTED COURSE ON CI
637.00	647.00	10.00	3R 05 MON GLIDE SLOPE ATT INDIC ON FDI
637.00	647.00	10.00	3A 10 MONITOR AIRSPEED INDIC
637.00	647.00	10.00	3H 06 MON ALTIMETER
637.00	647.00	10.00	3L 02 MON VERTICAL SPEED INDIC
643.00			160045 ANNUNCIATOR RECALL
643.00	645.28	2.28	7A 25 ACTUATE ANNUN PNL RECALL SW
645.28	645.81	0.53	7A 26 MON ALL ANNUN LTS
645.00			160073 CONTROL A/C ON FINAL APPROACH - C (6)
645.00			160079 MON INSTRUMENTS ON FINAL APP - P
647.00			160047 MON INSTRUMENTS ON FINAL APP
647.00	657.00	10.00	3R 02 MONITOR LOCALIZER INDICATOR ON FDI
647.00	657.00	10.00	3S 04 MON A/C POSITION RELATIVE TO SELECTED COURSE ON CI
647.00	657.00	10.00	3R 05 MON GLIDE SLOPE ATT INDIC ON FDI
647.00	657.00	10.00	3A 10 MONITOR AIRSPEED INDIC
647.00	657.00	10.00	3H 06 MON ALTIMETER
647.00	657.00	10.00	3L 02 MON VERTICAL SPEED INDIC
650.00			160073 CONTROL A/C ON FINAL APPROACH - C (6)
655.00			160041 MON VOR/RMI-1
657.00			160042 MON ADF/RMI-1
657.00			160046 MON ADF/RMI-2
657.00	660.20	3.20	6E 30 MON ADF NO.1 POINTER ON ADF/RMI 2 INDIC
660.00			16BL09 REACH 210 KCAS
660.00			160054 ACQUIRE GLIDESLOPE
660.00	662.58	2.58	3R 60 MON INITIAL MOVEMENT OF GLIDE SLOPE COMMAND BAR ON FDI
662.60	663.60	1.00	1P160071 CALL OUT -[GLIDE SLOPE ALIVE]
664.00			160061 CONTACT TOWER FOR FINAL LANDING CLEARANCE
664.00	665.45	1.45	1B 08 SET VHF-2 COMM TFR SW TO RIGHT
666.40	671.40	5.00	1B 25 ACT PUSH-TO-TALK SW ON CONTROL HANDGRIP
666.40	671.40	5.00	1B 17 COMM VIA VHF-2
670.40	674.40	4.00	1P160039 RADIO COMM-[ATLANTA TOWER, NASA 515 IS BAHRR.
674.40	681.40	7.00	1B 19 MON VHF-2 COMM AUDIO
674.40	678.40	4.00	1P160040 MON RADIO COMM - [NASA 515, NO. 3 FOR SL.DC-9 3 MI AHEAD.WIND 110
678.40	681.40	3.00	1P160041 AT NINE.CLEARED TO LAND RW 9L.

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SINCE MISSION START		ACTIVITY TIME	EVENT/PROCEDURE
BEGINNING	END		TASK
681.40	683.10	1.70	1S 29 ACTUATE COMM 2 PUSH-TO-TALK SW
681.40	683.10	1.70	1S 15 COMM VIA VHF-2
681.40	683.10	1.70	1P100037 RADIO COMM - [515, ROGER]
684.00			10BL10 CROSS BANRR
670.00			100072 CONTROL AIRCRAFT ON FINAL APP - B(240)
684.00			100011 SET FLAPS TO FLAPS 1
684.00	684.70	0.70	1P 10 MONITOR CALL-OUT
685.00	687.69	2.69	4E 07 SET FLAP CONT LEVER TO FLAPS 1
687.69	689.92	2.23	4E 15 MONITOR FLAP POSITION INDICATOR
689.92	691.09	1.17	4N 03 MON LE FLAPS-IN-TRANSIT LT ON
691.09	692.26	1.17	4N 04 MON LE FLAPS-IN-TRANSIT LT OFF
692.26	692.96	0.70	1P100058 CALL OUT -[FLAPS 1]
670.00			100080 MON INSTRUMENTS ON FINAL APP - P
685.00			10BL11 REACH 190 KCAS
694.00			100017 SET FLAPS TO FLAPS 5
695.00	697.69	2.69	4E 08 SET FLAP CONT LEVER TO FLAPS 5
699.00	699.70	0.70	1P100061 CALL OUT -[FLAPS 5]
694.00			100018 FLAP SET PROCEDURE
694.00	694.70	0.70	1P 10 MONITOR CALL-OUT
696.69	698.92	2.23	4E 15 MONITOR FLAP POSITION INDICATOR
698.71	701.21	2.50	4E 16 CHECK FLAP LEVER AND POSITION INDIC AGREE
697.69	698.86	1.17	4N 03 MON LE FLAPS-IN-TRANSIT LT ON
698.86	700.03	1.17	4N 04 MON LE FLAPS-IN-TRANSIT LT OFF
699.00			030007 ENGINE INSTRUMENT SCAN
699.00	699.44	0.44	7F 29 MON ENG NO 1 EPR IND
699.00	699.44	0.44	7F 30 MON ENG NO 2 EPR IND
699.44	699.88	0.44	7F 21 MON NO 1 ENG N1 IND
699.44	699.88	0.44	7F 22 MON NO 2 ENG N1 IND
699.88	700.32	0.44	7F 31 MON ENG NO 1 EXH GAS TEMP IND
699.88	700.32	0.44	7F 32 MON ENG NO 2 EXH GAS TEMP IND
700.32	700.76	0.44	7F 23 MON NO 1 ENG N2 IND
700.32	700.76	0.44	7F 24 MON NO 2 ENG N2 IND
700.76	701.20	0.44	7F 33 MON ENG NO 1 FUEL FLOW INDIC
700.76	701.20	0.44	7F 34 MON ENG NO 2 FUEL FLOW INDIC
701.20	701.64	0.44	7F 09 MON NO 1 ENG OIL PRESS INDIC
701.64	702.08	0.44	7F 10 MON NO 1 ENG OIL TEMP INDIC
701.64	702.08	0.44	7F 18 MON NO 2 ENG OIL TEMP INDIC
702.08	702.52	0.44	7F 11 MON NO 1 ENG OIL QTY INDIC
702.08	702.52	0.44	7F 19 MON NO 2 ENG OIL QTY INDIC
702.52	702.96	0.44	7F 12 MON NO 1 ENG VIBRATION AMPLITUDE INDIC

SINCE MISSION START BEGINNING	END	ACTIVITY TIME	EVENT/PROCEDURE	TASK	
702.52	702.96	0.44	7F	30	MON NO 2 ENG VIBR AMPLITUDE INDIC
700.00			160050		MON INSTRUMENTS ON FINAL APP - P
706.00			16BL12		REACH 170 KCAS
710.00			160047		MON INSTRUMENTS ON FINAL APP
710.00	720.00	10.00	3R	02	MONITOR LOCALIZER INDICATOR ON FDI
710.00	720.00	10.00	3S	04	MON A/C POSITION RELATIVE TO SELECTED COURSE ON CI
710.00	720.00	10.00	3R	03	MON GLIDE SLOPE ATT INDIC ON FDI
710.00	720.00	10.00	3A	10	MONITOR AIRSPEED INDIC
710.00	720.00	10.00	3H	06	MON ALTIMETER
710.00	720.00	10.00	3L	02	MON VERTICAL SPEED INDIC
720.00			160047		MON INSTRUMENTS ON FINAL APP
720.00	730.00	10.00	3R	02	MONITOR LOCALIZER INDICATOR ON FDI
720.00	730.00	10.00	3S	04	MON A/C POSITION RELATIVE TO SELECTED COURSE ON CI
720.00	730.00	10.00	3R	03	MON GLIDE SLOPE ATT INDIC ON FDI
720.00	730.00	10.00	3A	10	MONITOR AIRSPEED INDIC
720.00	730.00	10.00	3H	06	MON ALTIMETER
720.00	730.00	10.00	3L	02	MON VERTICAL SPEED INDIC
730.00			160047		MON INSTRUMENTS ON FINAL APP
730.00	740.00	10.00	3R	02	MONITOR LOCALIZER INDICATOR ON FDI
730.00	740.00	10.00	3S	04	MON A/C POSITION RELATIVE TO SELECTED COURSE ON CI
730.00	740.00	10.00	3R	03	MON GLIDE SLOPE ATT INDIC ON FDI
730.00	740.00	10.00	3A	10	MONITOR AIRSPEED INDIC
730.00	740.00	10.00	3H	06	MON ALTIMETER
730.00	740.00	10.00	3L	02	MON VERTICAL SPEED INDIC
730.00			90EV21		PILOT EXT VIS SCAN
740.00			160060		SET SPEED BRAKES
744.00			160048		MON ADF/RMI-2
744.00	746.26	2.26	6E	26	MON ADF NO.1 POINTER ON ADF/RMI 2 INDIC
745.00			160050		MON INSTRUMENTS ON FINAL APP - P
745.00			16BL13		CROSS REIFF
748.00			160070		SET AUTO BRAKES
748.00	750.02	2.02	4D	43	SET AUTO BRAKE SEL SW TO MED
750.02	750.28	0.26	4D	40	MON AUTO BRAKE INOP LT OFF
755.00			30EV01		C/P EXT VIS SCAN
755.00	760.00	5.00	8A	10	PILOT EXTERNAL VISION SCAN
765.00			160047		MON INSTRUMENTS ON FINAL APP
765.00	775.00	10.00	3R	02	MONITOR LOCALIZER INDICATOR ON FDI

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SINCE MISSION START BEGINNING	END	ACTIVITY TIME	EVENT/PROCEDURE TASK
765.00	775.00	10.00	3S 04 MON A/C POSITION RELATIVE TO SELECTED COURSE ON CI
765.00	775.00	10.00	3R 03 MON GLIDE SLOPE ATT INDIC ON FDI
765.00	775.00	10.00	3A 10 MONITOR AIRSPEED INDIC
765.00	775.00	10.00	3H 06 MON ALTIMETER
765.00	775.00	10.00	3L 02 MON VERTICAL SPEED INDIC
775.00			160047 MON INSTRUMENTS ON FINAL APP
775.00	785.00	10.00	3R 02 MONITOR LOCALIZER INDICATOR ON FDI
775.00	785.00	10.00	3S 04 MON A/C POSITION RELATIVE TO SELECTED COURSE ON CI
775.00	785.00	10.00	3R 03 MON GLIDE SLOPE ATT INDIC ON FDI
775.00	785.00	10.00	3A 10 MONITOR AIRSPEED INDIC
775.00	785.00	10.00	3H 06 MON ALTIMETER
775.00	785.00	10.00	3L 02 MON VERTICAL SPEED INDIC
775.00			160050 MON INSTRUMENTS ON FINAL APP - P
800.00			160058 REPORT RUNWAY IN SIGHT
800.00	802.00	2.00	8A 01 VIEW RUNWAY AHEAD
802.00	803.00	1.00	1P160074 CALL OUT -[RUNWAY IN SITE]
805.00			00EV21 PILOT EXT VIS SCAN
808.00			160016 FLAP SET PROCEDURE
808.00	808.70	0.70	1P 10 MONITOR CALL-OUT
810.69	812.92	2.23	4E 15 MONITOR FLAP POSITION INDICATOR
812.71	815.21	2.50	4E 16 CHECK FLAP LEVER AND POSITION INDIC AGREE
811.69	812.86	1.17	4N 03 MON LE FLAPS-IN-TRANSIT LT ON
812.86	814.03	1.17	4N 04 MON LE FLAPS-IN-TRANSIT LT OFF
808.00			160025 SET FLAPS TO FLAPS 15
809.00	811.40	2.40	4E 11 SET FLAP CONT LEVER TO FLAPS 15
813.00	813.70	0.70	1P160062 CALL OUT -[FLAPS 15]
813.00			160042 MON ADF/RMI-1
815.00			160069 CROSS RWY 08 OUTER MARKER
815.00	815.72	0.72	4V 11 MONITOR OUTER MARKER LT ON AND AUDIBLE SIGNAL
817.00	818.80	1.80	1P 13 MONITOR CALL-OUT
815.00			160L14 CROSS CATTA LOW-GEAR THEN EXTENDED AND 155 KCAS MAINTAINED
815.00			160049 MON RADIO ALTIMETER
815.00	817.00	2.00	3J 01 MON RADIO ALT ALTITUDE INDIC
820.00			160060 EXTEND LANDING GEAR
820.00	823.27	3.27	4D 03 SET LANDING GEAR LEVER TO DOWN POSITION
823.00	823.64	0.64	4D 05 MONITOR NOSE GEAR DOWN AND LOCKED LT ON

SINCE MISSION START BEGINNING	END	ACTIVITY TIME	EVENT/PROCEDURE TASK
765.00	775.00	10.00	3S 04 MON A/C POSITION RELATIVE TO SELECTED COURSE ON CI
765.00	775.00	10.00	3R 03 MON GLIDE SLOPE ATT INDIC ON FDI
765.00	775.00	10.00	3A 10 MONITOR AIRSPEED INDIC
765.00	775.00	10.00	3H 06 MON ALTIMETER
765.00	775.00	10.00	3L 02 MON VERTICAL SPEED INDIC
775.00			160047 MON INSTRUMENTS ON FINAL APP
775.00	785.00	10.00	3R 02 MONITOR LOCALIZER INDICATOR ON FDI
775.00	785.00	10.00	3S 04 MON A/C POSITION RELATIVE TO SELECTED COURSE ON CI
775.00	785.00	10.00	3R 03 MON GLIDE SLOPE ATT INDIC ON FDI
775.00	785.00	10.00	3A 10 MONITOR AIRSPEED INDIC
775.00	785.00	10.00	3H 06 MON ALTIMETER
775.00	785.00	10.00	3L 02 MON VERTICAL SPEED INDIC
775.00			160050 MON INSTRUMENTS ON FINAL APP - P
800.00			160058 REPORT RUNWAY IN SIGHT
800.00	802.00	2.00	5A 01 VIEW RUNWAY AHEAD
802.00	803.00	1.00	1P160074 CALL OUT -(RUNWAY IN SITE)
805.00			00EV21 PILOT EXT VIS SCAN
808.00			160018 FLAP SET PROCEDURE
808.00	808.70	0.70	1P 10 MONITOR CALL-OUT
810.69	812.92	2.23	4E 15 MONITOR FLAP POSITION INDICATOR
812.71	815.21	2.50	4E 16 CHECK FLAP LEVER AND POSITION INDIC AGREE
811.69	812.86	1.17	4N 03 MON LE FLAPS-IN-TRANSIT LT ON
812.86	814.03	1.17	4N 04 MON LE FLAPS-IN-TRANSIT LT OFF
809.00			160025 SET FLAPS TO FLAPS 15
809.00	811.40	2.40	4E 11 SET FLAP CONT LEVER TO FLAPS 15
813.00	813.70	0.70	1P160062 CALL OUT -(FLAPS 15)
812.00			160042 MON ADF/RMI-1
815.00			160059 CROSS RWY 36 OUTER MARKER
815.00	815.72	0.72	3V 11 MONITOR OUTER MARKER LT ON AND AUDIBLE SIGNAL
817.00	818.00	1.00	1P 13 MONITOR CALL-OUT
815.00			160L14 CROSS CATTA LOM-GEAR THEN EXTENDED AND 165 KCAS MAINTAINED
815.00			160048 MON RADIO ALTIMETER
815.00	817.00	2.00	3J 01 MON RADIO ALT ALTITUDE INDIC
820.00			160060 EXTEND LANDING GEAR
820.00	823.27	3.27	4D 03 SET LANDING GEAR LEVER TO DOWN POSITION
823.00	823.54	0.54	4D 05 MONITOR NOSE GEAR DOWN AND LOCKED LT ON

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SINCE MISSION START BEGINNING	END	ACTIVITY TIME	EVENT/PROCEDURE TASK
823.50	824.04	0.54	4D 08 MONITOR LEFT/RT GEAR DOWN AND LOCKED LT ON
820.00			160080 MON INSTRUMENTS ON FINAL APP - P
845.00			160062 LANDING CHECKLIST
845.00	846.00	1.00	8B090001 READ NEXT ITEM ON CHECKLIST ON CONTROL COLUMN PLACARD
847.00	847.60	0.60	1P160076 CALL OUT -[RECALL]
847.60	848.00	0.40	1P160077 CALL OUT -[CHECKED]
848.00	849.00	1.00	8B090001 READ NEXT ITEM ON CHECKLIST ON CONTROL COLUMN PLACARD
850.00	850.70	0.70	1P160078 CALL OUT -[SPEED BRAKES]
851.00	852.30	1.30	1P 02 MONITOR CALL-OUT
852.50	853.50	1.00	8B090001 READ NEXT ITEM ON CHECKLIST ON CONTROL COLUMN PLACARD
854.50	855.20	0.70	1P160080 CALL OUT -[LANDING GEAR]
855.20	856.20	1.00	1P160081 CALL OUT -[DOWN, THREE GREEN]
856.20	857.20	1.00	8B090001 READ NEXT ITEM ON CHECKLIST ON CONTROL COLUMN PLACARD
858.20	858.60	0.40	1P160082 CALL OUT -[FLAPS]
858.60	859.70	1.10	1P160083 CALL OUT -[FIFTEEN GREEN LIGHT]
861.10	862.20	1.10	1P160084 CALL OUT -[CHECKLIST COMPLETE]
861.10	862.20	1.10	1P 12 MONITOR CALL-OUT
860.00			00EV21 PILOT EXT VIS SCAN
855.00			160080 MON INSTRUMENTS ON FINAL APP - P
865.00			00EV02 C/P EXT VIS SCAN
865.00	875.00	10.00	8A 10 PILOT EXTERNAL VISION SCAN
877.00			160047 MON INSTRUMENTS ON FINAL APP
877.00	887.00	10.00	3R 02 MONITOR LOCALIZER INDICATOR ON FDI
877.00	887.00	10.00	3S 04 MON A/C POSITION RELATIVE TO SELECTED COURSE ON CI
877.00	887.00	10.00	3R 03 MON GLIDE SLOPE ATT INDIC ON FDI
877.00	887.00	10.00	3A 10 MONITOR AIRSPEED INDIC
877.00	887.00	10.00	3M 08 MON ALTIMETER
677.00	887.00	10.00	3L 02 MON VERTICAL SPEED INDIC
885.00			00EV21 PILOT EXT VIS SCAN
889.00			030007 ENGINE INSTRUMENT SCAN
889.00	889.44	0.44	7F 25 MON ENG NO 1 EPR IND
889.00	889.44	0.44	7F 30 MON ENG NO 2 EPR IND
889.44	889.88	0.44	7F 21 MON NO 1 ENG N1 IND
889.44	889.88	0.44	7F 22 MON NO 2 ENG N1 IND
889.88	890.32	0.44	7F 31 MON ENG NO 1 EXH GAS TEMP IND
889.88	890.32	0.44	7F 32 MON ENG NO 2 EXH GAS TEMP IND
890.32	890.76	0.44	7F 23 MON NO 1 ENG N2 IND
890.32	890.76	0.44	7F 24 MON NO 2 ENG N2 IND

SINCE MISSION START		ACTIVITY	EVENT/PROCEDURE
BEGINNING	END	TIME	TASK
890.76	891.20	0.44	7F 33 MON ENG NO 1 FUEL FLOW INDIC
890.76	891.20	0.44	7F 34 MON ENG NO 2 FUEL FLOW INDIC
891.20	891.64	0.44	7F 09 MON NO 1 ENG OIL PRESS INDIC
891.64	892.08	0.44	7F 10 MON NO 1 ENG OIL TEMP INDIC
891.64	892.08	0.44	7F 18 MON NO 2 ENG OIL TEMP INDIC
892.08	892.52	0.44	7F 11 MON NO 1 ENG OIL QTY INDIC
892.08	892.52	0.44	7F 19 MON NO 2 ENG OIL QTY INDIC
892.52	892.96	0.44	7F 12 MON NO 1 ENG VIBRATION AMPLITUDE INDIC
892.52	892.96	0.44	7F 20 MON NO 2 ENG VIBR AMPLITUDE INDIC
890.00			100080 MON INSTRUMENTS ON FINAL APP - F
895.00			100049 MON RADIO ALTIMETER
895.00	897.00	2.00	3J 01 MON RADIO ALT ALTITUDE INDIC
900.00			00EV04 C/P EXT VIS SCAN
900.00	920.00	20.00	8A 10 PILOT EXTERNAL VISION SCAN
923.00			100085 DESCEND THRU -DECISION HEIGTH
923.00	925.58	2.58	3R 12 MON DECISION HGT LT ON FDI
925.58	926.38	0.80	1P100088 CALL OUT -[DECISION HEIGHT]
924.00			100089 CONTROL AIRCRAFT THRU TOUCHDOWN
925.00			100084 CROSS RWY 08 MIDDLE MARKER
925.00	926.91	1.91	3V 13 MONITOR MIDDLE MARKER ANNUN LT ON AND AUDIBLE SIGNAL
926.00			10BL19 CROSS MIDDLE MARKER
930.00			00EV02 C/P EXT VIS SCAN
930.00	940.00	10.00	8A 10 PILOT EXTERNAL VISION SCAN
930.00			090003 FLIGHT INSTRUMENT SCAN - A
940.00			100047 MON INSTRUMENTS ON FINAL APP
940.00	950.00	10.00	3R 02 MONITOR LOCALIZER INDICATOR ON FDI
940.00	950.00	10.00	3S 04 MON A/C POSITION RELATIVE TO SELECTED COURSE ON CI
940.00	950.00	10.00	3R 03 MON GLIDE SLOPE ATT INDIC ON FDI
940.00	950.00	10.00	3A 10 MONITOR AIRSPEED INDIC
940.00	950.00	10.00	3H 06 MON ALTIMETER
940.00	950.00	10.00	3L 02 MON VERTICAL SPEED INDIC
941.00			10BL18 CROSS RW THRESHOLD
950.00			00EV02 C/P EXT VIS SCAN
950.00	960.00	10.00	8A 10 PILOT EXTERNAL VISION SCAN
950.00			100088 TOUCHDOWN
950.00			10BL17 TOUCHDOWN
950.00			090003 FLIGHT INSTRUMENT SCAN - A

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SINCE MISSION START		ACTIVITY	EVENT/PROCEDURE
BEGINNING	END	TIME	TASK
960.00			100047 MON INSTRUMENTS ON FINAL AP?
960.00	970.00	10.00	3R 02 MONITOR LOCALIZER INDICATOR ON FDI
960.00	970.00	10.00	3S 04 MON A/C POSITION RELATIVE TO SELECTED COURSE ON CI
960.00	970.00	10.00	3R 03 MON GLIDE SLOPE ATT INDIC ON FDI
960.00	970.00	10.00	3A 10 MONITOR AIRSPEED INDIC
960.00	970.00	10.00	3H 08 MON ALTIMETER
960.00	970.00	10.00	3L 02 MON VERTICAL SPEED INDIC
970.00			00EV02 C/P EXT VIS SCAN
970.00	980.00	10.00	5A 10 PILOT EXTERNAL VISION SCAN
970.00			000003 FLIGHT INSTRUMENT SCAN - A
984.00			100071 HANDOFF TO GROUND CONTROL -121.9
984.00	990.00	6.00	1B 18 MON VHF-2 COMM AUDIO
984.00	987.50	3.50	1P100087 MON RADIO COMM - [NASA 515,EXIT RUNWAY NEXT INTERSECTION. CONTACT GROUND
987.50	990.00	2.50	1P100088 POINT NINER WHEN CLEAR OF RUNWAY, OVER]
990.00	992.50	2.50	1B 14 ACT PUSH-TO-TALK SW ON HANDGRIP
990.00	992.50	2.50	1B 15 COMM VIA VHF-2
990.00	992.50	2.50	1P100089 RADIO COMM -[515, ROGER. POINT NINER WHEN CLEAR]
993.00	998.08	5.08	1B 01 MON VHF-2L FREQ IND
993.00	995.90	2.90	1B 02 SET VHF-2L FREQ-WHOLE NO.S
995.90	997.88	1.98	1B 03 SET VHF-2L FREQ - FRACTIONS
998.00	999.45	1.45	1B 05 SET VHF-2 COMM TFR SW TO LEFT
999.50	1003.00	3.50	1B 20 ACTUATE COMM 2 PUSH-TO-TALK SW
999.50	1003.00	3.50	1B 15 COMM VIA VHF-2
999.50	1003.00	3.50	1P100090 RADIO COMM -[ATLANTA GROUND, THIS IS NASA 515. TAXI TO GATE X, OVER]
1004.00	1007.50	3.50	1B 18 MON VHF-2 COMM AUDIO
1004.00	1007.50	3.50	1P100091 MON RADIO COMM - [NASA 515, ATLANTA GROUND, TAXI TO RAMP VIA NORTHEAST=SOUTH-
1007.50	1008.50	1.00	1P100092 WEST TAXIWAY, OVER]
1009.00	1010.70	1.70	1B 20 ACTUATE COMM 2 PUSH-TO-TALK SW
1009.00	1010.70	1.70	1B 15 COMM VIA VHF-2
1009.00	1010.70	1.70	1P100037 RADIO COMM - [515, ROGER]
990.00			000003 FLIGHT INSTRUMENT SCAN - A
1010.00			00EV03 C/P EXT VIS SCAN
1010.00	1025.00	15.00	5A 10 PILOT EXTERNAL VISIOM SCAN

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****************
* UNSHIFTED    *
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                              ****************************************
                              *                                      *
                              *      MISSION SCENARIO REPORT         *              NOV10 1986
                              *                                      *
                              *  MISSION - MD-8 DATA LINK            *
                              *           ILS AP-BASE LN.            *
                              *                                      *
                              *  CONFIGURATION - 737 CONVNT FLT DCK  *
                              *                                      *
                              *  CREWMEMBER - COPILOT                *
                              *                                      *
                              ****************************************

  TIME INTERVAL (SECS)          TOTAL                                      FLIGHT PHASE
  SINCE MISSION START           ACTIVITY                                     EVENT/PROCEDURE
  BEGINNING       END           TIME                                            TASK
     0.00                                                                  10DL DATA LINK FFD ILS AP
     0.00                                                                     10DL01   CROSS LOGEN INTERSEC
                                                                                       TION AT 250 KCAS AND
                                                                                       14000 FEET.ATL CENTR
                                                                                       HAS PREVIOUSLY INSTR
                                                                                       UCTED NASA 515 TO
                                                                                       MONITOR ATL APPROACH
                                                                                       ON 126.9 AT LOGEN.
                                                                                       VHF-2R HAS BEEN SET.
     0.00                                                                     10DL90   MONITOR ATL APPROACH
                                                                                       ON 126.9/VHF-2R
     0.00        1.45              1.45                                           1B    06   SET VHF-2 COMM TFR
                                                                                            SW TO RIGHT
     1.50        3.50              2.00                                           1B    04   ADJ VHF-2  VOLUME
     0.00                                                                     140003   ALTITUDE CHANGE PROC
    10.00                                                                     090039   FLIGHT INSTRUMENT
                                                                                       SCAN - F
    15.00                                                                     100013   SET NAV-1 TO RUNWAY
                                                                                       8L ILS -109.3
    15.00       21.00              6.00                                          5B    08   RETREIVE CHARTS
    21.00       26.00              5.00                                          5B100003   REVIEW CHARTS TO
                                                                                           DETERMINE RUNWAY 08
                                                                                           ILS FREQ AND REQ VOR
                                                                                           FREQ
    26.00       31.00              5.00                                          5U    01   MON NAV-1 FREQ INDIC
    26.00       29.00              3.00                                          5U    02   SET NAV-1 FREQ -
                                                                                            WHOLE NO.S
    29.00       31.00              2.00                                          5U    03   SET NAV-1 FREQ -
                                                                                            FRACTIONS
    31.50       34.40              2.90                                          1P100059   CALL OUT -(RUNWAY 8L
                                                                                           ILS IS ON NAV 1)
    31.50       33.77              2.27                                          5H    02   MON VOR POINTER NO.1
                                                                                           ON VOR/RMI 2 INDIC
    15.00                                                                    00EV30   PILOT EXT VIS SCAN
    38.00                                                                    100039   SET ADF-1 TO CATTA
                                                                                              -375KC
    38.00       41.00              3.00                                          5D    17   SET ADF NO.1 BFO SW
                                                                                           TO OFF
    41.00       41.77              0.77                                          5D    22   MON ADF NO.1 TUNING
                                                                                           METER INDIC
    41.77       43.75              1.98                                          5D    01   MONITOR ADF NO 1
                                                                                           FREQ INDIC
    43.75       45.73              1.98                                          5D    02   SELECT ADF NO 1 FREQ
                                                                                           INDIC
    45.73       47.23              1.50                                          1P100065   CALL OUT -(CATTA
                                                                                           ON ADF-1)
    49.00                                                                    100040   SET ADF-2 TO FLANC
                                                                                              -344
    49.00       51.89              2.89                                          5E    17   SEL ADF NO.2 FREQ
                                                                                           BAND .19-.40
    52.00       53.88              1.88                                          5E    01   MON ADF NO 2  FREQ.
                                                                                           INDIC
    52.00       53.98              1.98                                          5E    02   SELECT ADF NO 2 FREQ
    52.00       54.26              2.26                                          5E    20   MON ADF NO.2 TUNING
                                                                                           METER INDIC
    54.00       55.50              1.50                                          1P100066   CALL OUT -(FLANC
                                                                                           ON ADF-2)
    58.00                                                                    100038   SET DECISION HEIGTH
                                                                                      ON RADIO ALTIMETER
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SINCE MISSION START BEGINNING	END	ACTIVITY TIME	EVENT/PROCEDURE TASK
64.00			030007 ENGINE INSTRUMENT SCAN
64.00	64.44	0.44	7F 29 MON ENG NO 1 EPR IND
64.00	64.44	0.44	7F 30 MON ENG NO 2 EPR IND
64.44	64.88	0.44	7F 21 MON NO 1 ENG N1 IND
64.44	64.88	0.44	7F 22 MON NO 2 ENG N1 IND
64.88	65.32	0.44	7F 31 MON ENG NO 1 EXH GAS TEMP IND
64.88	65.32	0.44	7F 32 MON ENG NO 2 EXH GAS TEMP IND
65.32	65.76	0.44	7F 23 MON NO 1 ENG N2 IND
65.32	65.76	0.44	7F 24 MON NO 2 ENG N2 IND
65.76	66.20	0.44	7F 33 MON ENG NO 1 FUEL FLOW INDIC
65.76	66.20	0.44	7F 34 MON ENG NO 2 FUEL FLOW INDIC
66.20	66.64	0.44	7F 09 MON NO 1 ENG OIL PRESS INDIC
66.64	67.08	0.44	7F 10 MON NO 1 ENG OIL TEMP INDIC
66.64	67.08	0.44	7F 18 MON NO 2 ENG OIL TEMP INDIC
67.08	67.52	0.44	7F 11 MON NO 1 ENG OIL QTY INDIC
67.08	67.52	0.44	7F 19 MON NO 2 ENG OIL QTY INDIC
67.52	67.96	0.44	7F 12 MON NO 1 ENG VIBRATION AMPLITUDE INDIC
67.52	67.96	0.44	7F 20 MON NO 2 ENG VIBA AMPLITUDE INDIC
68.00			18AA01 ADJUST THRUST AND PITCH TO MAINTAIN A 900 FPM DESCENT AT 250 KCAS USING PITCH CWS MODE OF A.P. PILOT HAS DETERMINED THAT THIS SHOULD PERMIT DECEL TO 210 FOR CROSSING BAHAR AT 6000 FT.
73.00			100005 DESCENT AND APPROACH CHECKLIST - 1
70.00	72.30	2.30	1P 02 MONITOR CALL-OUT
72.30	77.30	5.00	8B 02 RETREIVE CHECKLIST
78.00	83.00	5.00	8B 06 FIND CHECKLIST IN HANDBOOK
83.00	85.00	2.00	8B 03 READ NEXT ITEM ON CHECKLIST
85.00	86.09	1.09	1P100044 CALL OUT-(ANTI-ICE)
87.00	87.80	0.80	1P100045 CALL OUT-(NOT REQD)
88.00	90.00	2.00	8B 03 READ NEXT ITEM ON CHECKLIST
90.00	91.90	1.90	1P100046 CALL OUT -(AIR CONDITIONING AND PRESSURIZATION)
92.00	94.67	2.67	7D 69 MON PASS CAB TEMP CONT SETTING
94.67	96.69	2.02	7D 70 MON CONT CAB TEMP CONT SETTING
96.69	97.86	1.17	7E 06 MON LDG ALT CNTR
98.00	98.40	0.40	1P100047 CALL OUT (SET)
99.00			00EV33 PILOT EXT VIS SCAN
100.00			100006 DESCENT AND APPROACH CHECKLIST - 2
100.00	102.00	2.00	8B 03 READ NEXT ITEM ON CHECKLIST
102.00	102.80	0.80	1P100048 CALL OUT-(START SWITCHES)
105.50	109.00	3.50	1P 06 MONITOR REPORT
109.00	111.00	2.00	8B 03 READ NEXT ITEM ON CHECKLIST

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SINCE MISSION START          ACTIVITY                          EVENT/PROCEDURE
BEGINNING       END          TIME                                  TASK
111.00         112.10           1.10                               1P160050   CALL OUT-[INBOARD
                                                                              LANDING LIGHTS]

112.00         114.20           2.20                               7G     17  SET LANDING LIGHTS
                                                                              SW TO ON

114.20         114.50           0.30                               1P160051   CALL OUT -[ON]

114.50         116.50           2.00                               6B     03  READ NEXT ITEM ON
                                                                              CHECKLIST

116.50         117.90           1.40                               1P160052   CALL OUT -[ALTIMETER
                                                                              AND INSTRUMENTS]

118.00         120.37           2.37                               3H     02  MON CORR BARO ALT
                                                                              INDIC

120.37         123.37           3.00                               3H     05  F.O. CHECK CAPT<S
                                                                              ALTIMETER BARO SET
                                                                              AND INDICATED ALTI-
                                                                              TUDE

123.40         124.70           1.30                               1P160053   CALL OUT-[SET AND
                                                                              CROSSCHECKED]

126.00                                                         160007   DESCENT AND APPROACH
                                                                        CHECKLIST - 3

126.00         128.00           2.00                               6B     03  READ NEXT ITEM ON
                                                                              CHECKLIST

128.00         129.50           1.50                               1P160054   CALL OUT-[EPR AND
                                                                              IAS BUGS]

128.00         131.00           3.00                               5B010004   RETREIVE FLIGHT
                                                                              PLANNING REF. DATA
                                                                              MANUAL

131.00         136.00           5.00                               5B160001   DETERMINE GO-AROUND
                                                                              EPR BUG SET VALUE

136.00         138.32           2.32                               7F     26  SET ENG NO 1 EPR BUG

136.32         138.32           2.00                               7F     27  MON ENG NO 1 EPR BUG

138.32         140.64           2.32                               7F     28  SET ENG NO 2 EPR BUG

138.64         140.64           2.00                               7F     29  MON ENG NO 2 EPR BUG

141.00         146.00           5.00                               5B160002   DETERMINE LANDING
                                                                              V-REF BUG SET VALUE

146.00         148.57           2.57                               3A     07  MON V-REF BUG
                                                                              SETTING

146.00         148.57           2.57                               3A     06  SET V-REF BUG

146.00         147.90           1.90                               1P160055   CALL OUT -[V-REF IS
                                                                              XXX KNOTS]

151.00         154.00           3.00                               3A     12  F.O. CHECK CAPT'S
                                                                              V-REF BUG SETTING

154.00         155.60           1.60                               1P160056   CALL OUT -[BUGS SET
                                                                              AND CROSS-CHECKED]

155.60         157.60           2.00                               6B     03  READ NEXT ITEM ON
                                                                              CHECKLIST

155.60         156.90           1.30                               1P160057   CALL OUT -[CHECKLIST
                                                                              COMPLETED]

157.60         160.60           3.00                               6B     06  STOW CHECKLIST

160.60         162.60           2.00                               5B010005   STOW FLIGHT PLANNING
                                                                              REF. DATA MANUAL

150.00                                                         000019   FLIGHT INSTRUMENT
                                                                        SCAN - B

165.00                                                         030007   ENGINE INSTRUMENT
                                                                        SCAN

165.00         165.44           0.44                               7F     25  MON ENG NO 1 EPR IND

165.00         165.44           0.44                               7F     30  MON ENG NO 2 EPR IND

165.44         165.88           0.44                               7F     21  MON NO 1 ENG N1 IND

165.44         165.88           0.44                               7F     22  MON NO 2 ENG N1 IND

165.88         166.32           0.44                               7F     31  MON ENG NO 1 EXH GAS
                                                                              TEMP IND

165.88         166.32           0.44                               7F     32  MON ENG NO 2 EXH GAS
                                                                              TEMP IND

166.32         166.76           0.44                               7F     23  MON NO 1 ENG N2 IND

166.32         166.76           0.44                               7F     24  MON NO 2 ENG N2 IND

166.76         167.20           0.44                               7F     33  MON ENG NO 1 FUEL
                                                                              FLOW INDIC
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SINCE MISSION START BEGINNING	END	ACTIVITY TIME	EVENT/PROCEDURE	TASK	
166.76	167.20	0.44	7F	26	MON ENG NO 2 FUEL FLOW INDIC
167.20	167.64	0.44	7F	08	MON NO 1 ENG OIL PRESS INDIC
167.64	168.08	0.44	7F	10	MON NO 1 ENG OIL TEMP INDIC
167.64	168.08	0.44	7F	18	MON NO 2 ENG OIL TEMP INDIC
168.08	168.52	0.44	7F	11	MON NO 1 ENG OIL QTY INDIC
168.08	168.52	0.44	7F	19	MON NO 2 ENG OIL QTY INDIC
168.52	168.96	0.44	7F	12	MON NO 1 ENG VIBRATION AMPLITUDE INDIC
168.52	168.96	0.44	7F	20	MON NO 2 ENG VIBR AMPLITUDE INDIC
172.00			00EV03		C/P EXT VIS SCAN
172.00	187.00	15.00	0A	10	PILOT EXTERNAL VISION SCAN
185.00			160040		MON ADF/RMI-2
185.00	187.20	2.70	0E	20	MON ADF NO.1 POINTER ON ADF/RMI 2 INDIC
195.00			100L11		HANDOFF TO ATL FINAL APPROACH CONTROLLER VECTOR TO DOWNWIND
195.00	196.00	1.00	13162201		MON INFORMATION MANAGEMENT [illegible]
196.00	198.00	2.00	13162202		MON INFORMATION MANAGEMENT DISPLAY (MODE-S UPLINK PEND) AMBER
198.60	200.40	1.80	13169001		LINE SELECT (ATC UPLINKS PENDING)
200.40	210.40	10.00	13162201		READ -TURN RT HDG 270,DESCND AND MAINTAIN 6000 FT,MONITOR ATL APPR ON 127.25
210.40	212.20	1.80	13169041		LINE SELECT (WILCO)
200.00			140007		HEADING CHANGE PROC.
200.00			100L02		BEGIN TURN TO DOWNWIND LEG
210.00			100L03		DESCEND THRU 11000.
215.00			164A01		ADJUST THRUST AND PITCH TO MAINTAIN A 800 FPM DESCENT AT 250 KCAS USING PITCH CWS MODE OF A.P. PILOT HAS DETERMINED THAT THIS SHOULD PERMIT DECEL TO 210 FOR CROSSING DAWSO AT 6000 FT.
219.00			100002		TUNE ATL APPROACH ON 127.25
219.00	223.00	4.00	18	01	MON VHF-2L FREQ IND
219.00	221.00	2.00	18	02	SET VHF-2L FREQ-WHOLE NO.S
221.00	223.00	1.00	18	03	SET VHF-2L FREQ - FRACTIONS
226.00			100L08		MONITOR ATL APPROACH ON 127.25/VHF-2L
226.00	227.40	1.40	18	05	SET VHF-2 COMM XFR SW TO LEFT
227.50	229.50	2.00	18	04	ADJ VHF-2 VOLUME
230.00			000017		FLIGHT INSTRUMENT SCAN - C
240.00			00EV00		C/P EXT VIS SCAN
240.00	285.00	45.00	0A	12	PILOT EXTERNAL VISION SCAN

C-2

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SINCE MISSION START        ACTIVITY                         EVENT/PROCEDURE
BEGINNING     END          TIME                                TASK

288.00                                                      000033   FLIGHT INSTRUMENT
                                                                     SCAN - F

288.00                                                      000007   ENGINE INSTRUMENT
                                                                     SCAN

288.00       288.44          0.44                              77    36   MON ENG NO 1 EPR IND
288.00       288.44          0.44                              77    36   MON ENG NO 2 EPR IND
288.44       288.88          0.44                              77    21   MON NO 1 ENG N1 IND
288.44       288.88          0.44                              77    22   MON NO 2 ENG N1 IND
288.88       289.32          0.44                              77    01   MON ENG NO 1 EXH GAS
                                                                          TEMP IND
288.88       289.32          0.44                              77    02   MON ENG NO 2 EXH GAS
                                                                          TEMP IND
289.32       289.76          0.44                              77    23   MON NO 1 ENG N2 IND
289.32       289.76          0.44                              77    24   MON NO 2 ENG N2 IND
289.76       290.20          0.44                              77    35   MON IND NO 1 FUEL
                                                                          FLOW INDIC
289.76       290.20          0.44                              77    36   MON ENG NO 2 FUEL
                                                                          FLOW INDIC
290.20       290.64          0.44                              77    09   MON NO 1 ENG OIL
                                                                          PRESS INDIC
290.64       291.08          0.44                              77    10   MON NO 1 ENG OIL
                                                                          TEMP INDIC
290.64       291.08          0.44                              77    10   MON NO 2 ENG OIL
                                                                          TEMP INDIC
291.08       291.52          0.44                              77    11   MON NO 1 ENG OIL QTY
                                                                          INDIC
291.08       291.52          0.44                              77    19   MON NO 2 ENG OIL
                                                                          QTY INDIC
291.52       291.96          0.44                              77    12   MON NO 1 ENG VIBRA-
                                                                          TION AMPLITUDE INDIC
291.52       291.96          0.44                              77    20   MON NO 2 ENG VIBR
                                                                          AMPLITUDE INDIC

295.00                                                      000900   C/P EXT VIS SCAN
295.00       340.00         45.00                              66    13      PILOT EXTERNAL
                                                                          VISION SCAN

300.00                                                      16AAT1   ADJUST THRUST AND
                                                                     PITCH TO MAINTAIN A
                                                                     500 FPM DESCENT AT
                                                                     250 KCAS USING PITCH
                                                                     CMD MODE OF A.P.
                                                                     PILOT HAS DETERMINED
                                                                     THAT THIS SHOULD
                                                                     PERMIT DECEL TO 210
                                                                     FOR CRUISING SPEED
                                                                     AT 6000 FT.

340.00                                                      000900   C/P EXT VIS SCAN
340.00       360.00         20.00                              66    10      PILOT  EXTERNAL
                                                                          VISION SCAN

363.00                                                      000007   ENGINE INSTRUMENT
                                                                     SCAN

363.00       363.44          0.44                              77    35   MON ENG NO 1 EPR IND
363.00       363.44          0.44                              77    36   MON ENG NO 2 EPR IND
363.44       363.88          0.44                              77    21   MON NO 1 ENG N1 IND
363.44       363.88          0.44                              77    22   MON NO 2 ENG N1 IND
363.88       364.32          0.44                              77    01   MON ENG NO 1 EXH GAS
                                                                          TEMP IND
363.88       364.32          0.44                              77    02   MON ENG NO 2 EXH GAS
                                                                          TEMP IND
364.32       364.76          0.44                              77    23   MON NO 1 ENG N2 IND
364.32       364.76          0.44                              77    24   MON NO 2 ENG N2 IND
364.76       365.20          0.44                              77    35   MON ENG NO 1 FUEL
                                                                          FLOW INDIC
364.76       365.20          0.44                              77    36   MON ENG NO 2 FUEL
                                                                          FLOW INDIC
365.20       365.64          0.44                              77    09   MON NO 1 ENG OIL
                                                                          PRESS INDIC
365.64       366.08          0.44                              77    10   MON NO 1 ENG OIL
                                                                          TEMP INDIC
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SINCE MISSION START BEGINNING	END	ACTIVITY TIME	EVENT/PROCEDURE TASK
365.64	366.08	0.44	7F 18 MON NO 2 ENG OIL TEMP INDIC
366.08	366.52	0.44	7F 11 MON NO 1 ENG OIL QTY INDIC
366.08	366.52	0.44	7F 19 MON NO 2 ENG OIL QTY INDIC
366.52	366.96	0.44	7F 12 MON NO 1 ENG VIBRATION AMPLITUDE INDIC
366.52	366.96	0.44	7F 20 MON NO 2 ENG VIBR AMPLITUDE INDIC
370.00			100L44 DESCEND THRU 6000
370.00			100L54 ALTITUDE STEP DOWN
370.00	371.00	1.00	10102301 MON INFORMATION MANAGEMENT ATE6000
371.00	373.00	2.00	10102302 MON INFORMATION MANAGEMENT DISPLAY (MODE-3 UPLINK PEND) AMBER
373.00	373.40	1.00	12100001 LINE SELECT (ATC UPLINKS PENDING)
373.40	379.40	6.00	10102304 READ -DESCEND AND MAINTAIN 6000 FT
379.40	381.20	1.80	12100041 LINE SELECT (WILCO)
370.00			000020 FLIGHT INSTRUMENT SCAN - F
385.00			000400 C/P EXT VIS SCAN
385.00	425.00	40.00	56 11 PILOT EXTERNAL VISION SCAN
430.00			000007 ENGINE INSTRUMENT SCAN
430.00	430.44	0.44	7F 25 MON ENG NO 1 EPR IND
430.00	430.44	0.44	7F 26 MON ENG NO 2 EPR IND
430.44	430.88	0.44	7F 21 MON NO 1 ENG N1 IND
430.44	430.88	0.44	7F 22 MON NO 2 ENG N1 IND
430.88	431.32	0.44	7F 31 MON ENG NO 1 EXH GAS TEMP IND
430.88	431.32	0.44	7F 32 MON ENG NO 2 EXH GAS TEMP IND
431.32	431.76	0.44	7F 23 MON NO 1 ENG N2 IND
431.32	431.76	0.44	7F 24 MON NO 2 ENG N2 IND
431.76	432.20	0.44	7F 33 MON ENG NO 1 FUEL FLOW INDIC
431.76	432.20	0.44	7F 34 MON ENG NO 2 FUEL FLOW INDIC
432.20	432.64	0.44	7F 09 MON NO 1 ENG OIL PRESS INDIC
432.64	433.08	0.44	7F 10 MON NO 1 ENG OIL TEMP INDIC
432.64	433.08	0.44	7F 18 MON NO 2 ENG OIL TEMP INDIC
433.08	433.52	0.44	7F 11 MON NO 1 ENG OIL QTY INDIC
433.08	433.52	0.44	7F 19 MON NO 2 ENG OIL QTY INDIC
433.52	433.96	0.44	7F 12 MON NO 1 ENG VIBRATION AMPLITUDE INDIC
433.52	433.96	0.44	7F 20 MON NO 2 ENG VIBR AMPLITUDE INDIC
450.00			100L02 RECEIVE ATL ETIS TERMINAL INFORMATION
450.00	451.00	1.00	12100004 LINE SELECT (ETIS REQUESTS)
451.50	453.50	2.00	10102333 READ (ETIS REQUEST FOR SATL)

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SINCE MISSION START       ACTIVITY                      EVENT/PROCEDURE
BEGINNING       END       TIME                              TASK

453.80    455.80              1.00                          12100040   LINE SELECT
                                                                       (FULL ETIS REPORT)

455.80    460.20              1.00                          10102101   MON INFORMATION
                                                                       MANAGEMENT
                                                                       ATENSON

460.70    462.20              2.00                          10102100   MON VISUAL ALERT DSP
                                                                       (MODE-S UPLINK PEND)
                                                                       INVERTED BLUE

462.20    464.00              1.00                          12100001   LINE SELECT (ATC
                                                                       UPLINKS PENDING)

464.00    474.00             10.00                          10102231   READ-ETIS REPORT FOR
                                                                       ATL AT 2222Z. SKY 25
                                                                       SCT/40 BKN. VSB 10.
                                                                       WIND 110/10/G17.

474.00    479.00              5.00                          10102232   TEMP 59. ALT 2994.
                                                                       APS 26R&L AND 08R&L
                                                                       SIMULT PARALLEL ILS

479.00    480.00              1.00                          12100047   LINE SELECT
                                                                       (PRINT MESSAGE)

480.00                                                  1SBL05   CROSS FT HRB

470.00                                                  1SAA01   ADJUST THRUST AND
                                                                 PITCH TO MAINTAIN A
                                                                 500 FPM DESCENT AT
                                                                 250 KCAS USING PITCH
                                                                 CWS MODE OF A.P.
                                                                 PILOT HAS DETERMINED
                                                                 THAT THIS SHOULD
                                                                 PERMIT DECEL TO 210
                                                                 FOR CROSSING DANNS
                                                                 AT 8000 FT.

480.                                                    1S0080   SET ALTIMETER BARO
                                                                 SETTING TO 29.94

   .00    482.00              2.00                          1P150043   CALL OUT-(DESCENT
                                                                       AND APPROACH CHECK-
                                                                       LIST)

484.00                                                  140032   ALTIMETER BARO SET
                                                                 PROC.

484.00    488.85              2.85                          34    04   MONITOR ALTIMETER
                                                                       BARO SETTING INDIC

474.00    480.85              2.85                          34    03   SET ALTIMETER  BARO
                                                                       SETTING CONTROL

480.00                                                  490017   FLIGHT INSTRUMENT
                                                                 SCAN - C

513.00                                                  500007   ENGINE INSTRUMENT
                                                                 SCAN

513.00    513.44              0.44                          77    20   MON ENG NO 1 EPR IND
513.00    513.44              0.44                          77    30   MON ENG NO 2 EPR IND
513.44    513.88              0.44                          77    21   MON NO 1 ENG N1 IND
513.44    513.88              0.44                          77    22   MON NO 2 ENG N1 IND
513.88    514.32              0.44                          77    31   MON ENG NO 1 EXH GAS
                                                                       TEMP IND

513.88    514.32              0.44                          77    32   MON ENG NO 2 EXH GAS
                                                                       TEMP IND

514.32    514.76              0.44                          77    23   MON NO 1 ENG N2 IND
514.32    514.76              0.44                          77    24   MON NO 2 ENG N2 IND
514.76    515.20              0.44                          77    33   MON ENG NO 1 FUEL
                                                                       FLOW INDIC

514.76    515.20              0.44                          77    34   MON ENG NO 2 FUEL
                                                                       FLOW INDIC

515.20    515.64              0.44                          77    08   MON NO 1 ENG OIL
                                                                       PRESS INDIC

515.64    516.08              0.44                          77    10   MON NO 1 ENG OIL
                                                                       TEMP INDIC

515.64    516.08              0.44                          77    18   MON NO 2 ENG OIL
                                                                       TEMP INDIC

516.08    516.52              0.44                          77    11   MON NO 1 ENG OIL QTY
                                                                       INDIC

516.08    516.52              0.44                          77    19   MON NO 2 ENG OIL
                                                                       QTY INDIC

516.52    516.96              0.44                          77    12   MON NO 1 ENG VIBRA-
                                                                       TION AMPLITUDE INDIC
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SINCE MISSION START BEGINNING	END	ACTIVITY TIME	EVENT/PROCEDURE TASK
518.12	518.56	0.44	77 39 MON NO 1 ENG VIBR AMPLITUDE INDIC
519.00			100041 MON VOR/RMI-1
520.00			100L00 VECTOR FOR BASE LEG
520.00	521.00	1.00	10102201 MON INFORMATION MANAGEMENT ATTENSON
521.00	523.00	2.00	10102202 MON INFORMATION MANAGEMENT DISPLAY (MODE-S UPLINK PROG) AMBER
523.00	525.40	1.00	12100001 LINE SELECT (ATC UPLINKS PENDING)
525.40	528.40	3.00	10102206 READ -TURN LEFT HEADING 180
528.40	530.20	1.80	12100041 LINE SELECT (WILCO)
533.00			140007 HEADING CHANGE PROC.
533.00			100L00 BEGIN TURN TO BASE
533.00			140007 HEADING CHANGE PROC.
540.00			140023 REPORT 1000 FT TO LEVEL OFF
540.00	542.13	2.13	39 02 MON CORR BARO ALT INDIC
542.00	543.70	1.70	1P140040 CALL OUT -(1000 FEET TO LEVEL OFF)
543.00			140007 HEADING CHANGE PROC.
550.00			000V00 C/P EXT VIS SCAN
550.00	565.00	15.00	06 10 PILOT EXTERNAL VISION SCAN
555.00			000003 FLIGHT INSTRUMENT SCAN - 3
565.00			100041 MON VOR/RMI-1
565.00			100043 MON ADF/RMI-1
570.00			100L00 VECTOR TO FINAL APPR
570.00	571.00	1.00	10102201 MON INFORMATION MANAGEMENT ATTENSON
571.00	573.00	2.00	10102202 MON INFORMATION MANAGEMENT DISPLAY (MODE-S UPLINK PROG) AMBER
573.00	575.40	1.00	12100001 LINE SELECT (ATC UPLINKS PENDING)
575.40	584.40	9.00	10102206 READ -12 NM FROM OM TURN LT HDG 110.MAIN TAIN 6000 UNTIL [illegible] BANKS.
584.40	591.40	7.00	10102207 CLEARED FOR ILS 8L APPR.MONITOR TOWER ON 119.5 AT BANKS
591.40	593.20	1.80	12100041 LINE SELECT (WILCO)
575.00			140007 HEADING CHANGE PROC.
575.00			100L07 TURN TO INTERCEPT FINAL APPR. COURSE
585.00			140007 HEADING CHANGE PROC.
597.00			100034 TUNE ATLANTA TOWER -119.5
597.00	601.00	4.00	19 07 MON VHF-20 FREQ IND
597.00	599.00	2.00	19 08 SET VHF-20 FREQ - WHOLE NO.S
599.00	601.00	1.00	19 09 SET VHF-20 FREQ - FRACTIONS
600.00			100071 MON INSTRUMENTS ON FINAL APP - ?
607.00			100047 MON INSTRUMENTS ON FINAL APP

SINCE MISSION START		ACTIVITY	EVENT/PROCEDURE		
BEGINNING	END	TIME		TASK	
607.00	617.00	10.00	3B	03	MONITOR LOCALIZER INDICATOR ON FDI
607.00	617.00	10.00	3E	04	MON A/C POSITION RELATIVE TO SELECTED COURSE ON CI
607.00	617.00	10.00	3B	63	MON GLIDE SLOPE ATT INDIC ON FDI
607.00	617.00	10.00	3A	10	MONITOR AIRSPEED INDIC
607.00	617.00	10.00	3H	06	MON ALTIMETER
607.00	617.00	10.00	3L	02	MON VERTICAL SPEED INDIC
610.00			16AA02		SELECT ALT HOLD AND AUTO APP FD MODES TO CAPTURE LOCALIZER PRIOR TO GAMMA,LEVEL AT 6000 FT
619.00			160003		ALTITUDE CHANGE PROC
619.00			16BL06		LEVEL OFF AT 6000 FT BEGIN DECEL FROM 250 TO 210 KCAS
617.00			160047		MON INSTRUMENTS ON FINAL APP
617.00	627.00	10.00	3B	03	MONITOR LOCALIZER INDICATOR ON FDI
617.00	627.00	10.00	3E	04	MON A/C POSITION RELATIVE TO SELECTED COURSE ON CI
617.00	627.00	10.00	3B	63	MON GLIDE SLOPE ATT INDIC ON FDI
617.00	627.00	10.00	3A	10	MONITOR AIRSPEED INDIC
617.00	627.00	10.00	3H	06	MON ALTIMETER
617.00	627.00	10.00	3L	02	MON VERTICAL SPEED INDIC
620.00			16AA03		ADJUST THRUST TO DECEL TO 210 KCAS BEFORE GAMMA
623.00			160007		CAPTURE ILS LOC BEGIN TURN TO HDG 360
623.00	625.50	2.50	3B	33	MON INITIAL MOVEMENT OF ROLL COMMAND BAR ON FDI
625.50	626.80	1.30		1P160007	CALL OUT -(LOCALIZER ALIVE)
628.50	631.50	3.00	1P	03	MONITOR CALL-OUT
627.00			160047		MON INSTRUMENTS ON FINAL APP
627.00	637.00	10.00	3B	03	MONITOR LOCALIZER INDICATOR ON FDI
627.00	637.00	10.00	3E	04	MON A/C POSITION RELATIVE TO SELECTED COURSE ON CI
627.00	637.00	10.00	3B	63	MON GLIDE SLOPE ATT INDIC ON FDI
627.00	637.00	10.00	3A	10	MONITOR AIRSPEED INDIC
627.00	637.00	10.00	3H	06	MON ALTIMETER
627.00	637.00	10.00	3L	02	MON VERTICAL SPEED INDIC
637.00			160047		MON INSTRUMENTS ON FINAL APP
637.00	647.00	10.00	3B	03	MONITOR LOCALIZER INDICATOR ON FDI
637.00	647.00	10.00	3E	04	MON A/C POSITION RELATIVE TO SELECTED COURSE ON CI
637.00	647.00	10.00	3B	63	MON GLIDE SLOPE ATT INDIC ON FDI
637.00	647.00	10.00	3A	10	MONITOR AIRSPEED INDIC

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SINCE MISSION START BEGINNING	END	ACTIVITY TIME	EVENT/PROCEDURE TASK
637.00	647.00	10.00	8K 44 MON ALTIMETER
637.00	647.00	10.00	8L 02 MON VERTICAL SPEED INDIC
643.00			100045 ANNUNCIATOR RECALL
643.00	645.20	2.20	7A 20 ACTUATE ANNUN PNL RECALL SW
645.20	645.81	0.53	7A 30 MON ALL ANNUN LTS
645.00			100073 CONTROL A/C ON FINAL APPROACH - C (6)
646.00			100079 MON INSTRUMENTS ON FINAL APP - P
647.00			100067 MON INSTRUMENTS ON FINAL APP
647.00	657.00	10.00	8B 02 MONITOR LOCALIZER INDICATOR ON FDI
647.00	657.00	10.00	3D 04 MON A/C POSITION RELATIVE TO SELECTED COURSE ON CI
647.00	657.00	10.00	8B 04 MON GLIDE SLOPE ATT INDIC ON FDI
647.00	657.00	10.00	8G 10 MONITOR AIRSPEED INDIC
647.00	657.00	10.00	8K 04 MON ALTIMETER
647.00	657.00	10.00	8L 02 MON VERTICAL SPEED INDIC
655.00			100073 CONTROL A/C ON FINAL APPROACH - C (6)
656.00			100041 MON VOR/RMI-1
657.00			100043 MON ADF/RMI-1
657.00			100048 MON ADF/RMI-2
657.00	659.20	2.20	8E 20 MON ADF NO.1 POINTER ON ADF/RMI 2 INDIC
660.00			100L05 REACH 110 KCAS
660.00			100054 ACQUIRE GLIDESLOPE
660.00	662.00	2.00	8B 08 MON INITIAL MOVEMENT OF GLIDE SLOPE COMMAND BAR ON FDI
662.60	663.60	1.00	1P100071 CALL OUT -(GLIDE SLOPE ALIVE)
664.00			100L04 MONITOR ATL TOWER ON 119.5/VHF-2R
664.00	665.40	1.40	1B 06 SET VHF-2 COMM TFR SW TO RIGHT
665.00	667.00	2.00	1B 04 ADJ VHF-2 VOLUME
666.00			100L10 CROSS OUTER
670.00			100L41 LANDING CLEARANCE
670.00	671.00	1.00	10100201 MON INFORMATION MANAGEMENT ATTENTION
671.00	673.00	2.00	10100202 MON INFORMATION MANAGEMENT DISPLAY (MODE-S UPLINK PEND) AMBER
674.40	675.40	1.00	12100001 LINE SELECT (ATC UPLINK PENDING)
675.40	685.40	10.00	10102240 READ -NO.3 FOR RL. DC-9 3 MI AHEAD, WIND 110 AT 9. CLEARED TO LAND ON RL.
685.40	687.20	1.80	12100041 LINE SELECT (WILCO)
679.00			100073 CONTROL AIRCRAFT ON FINAL APP - B(540)
684.00			100011 SET FLAPS TO FLAPS 1
684.00	684.70	0.70	1P 10 MONITOR CALL-OUT

SINCE MISSION START BEGINNING	END	ACTIVITY TIME	EVENT/PROCEDURE TASK
685.00	687.00	2.00	4E 07 SET FLAP CONT LEVER TO FLAPS 1
687.00	689.33	2.33	4E 15 MONITOR FLAP POSITION INDICATOR
689.83	691.00	1.17	4B 03 MON LE FLAPS-IN-TRANSIT LT ON
691.00	692.28	1.17	4B 04 MON LE FLAPS-IN-TRANSIT LT OFF
691.38	692.08	0.70	1P100008 CALL OUT -(FLAPS 1)
679.09			104/08 MON INSTRUMENTS ON FINAL APP - F
688.00			105L11 REACH 190 KCAS
694.00			100017 SET FLAPS TO FLAPS 5
695.00	697.00	2.00	4E 06 SET FLAP CONT LEVER TO FLAPS 5
699.00	699.70	0.70	1P100001 CALL OUT -(FLAPS 5)
694.00			100010 FLAP SET PROCEDURE
694.00	694.70	0.70	1P 10 MONITOR CALL-OUT
696.00	698.33	2.33	4E 15 MONITOR FLAP POSITION INDICATOR
699.71	701.21	1.50	4E 16 CHECK FLAP LEVER AND POSITION INDIC AGREE
697.00	698.33	1.17	4B 03 MON LE FLAPS-IN-TRANSIT LT ON
698.83	700.00	1.17	4B 04 MON LE FLAPS-IN-TRANSIT LT OFF
690.00			6D0007 ENGINE INSTRUMENT SCAN
699.00	699.44	0.44	7F 25 MON ENG NO 1 EPR IND
699.00	699.44	0.44	7F 26 MON ENG NO 2 EPR IND
699.44	699.88	0.44	7F 21 MON NO 1 ENG N1 IND
699.44	699.88	0.44	7F 22 MON NO 2 ENG N1 IND
699.88	700.32	0.44	7F 31 MON ENG NO 1 EXH GAS TEMP IND
699.88	700.32	0.44	7F 32 MON ENG NO 2 EXH GAS TEMP IND
700.32	700.76	0.44	7F 23 MON NO 1 ENG N2 IND
700.32	700.76	0.44	7F 24 MON NO 2 ENG N2 IND
700.76	701.20	0.44	7F 33 MON ENG NO 1 FUEL FLOW INDIC
700.76	701.20	0.44	7F 34 MON ENG NO 2 FUEL FLOW INDIC
701.20	701.64	0.44	7F 05 MON NO 1 ENG OIL PRESS INDIC
701.64	702.08	0.44	7F 10 MON NO 1 ENG OIL TEMP INDIC
701.64	702.08	0.44	7F 16 MON NO 2 ENG OIL TEMP INDIC
702.08	702.52	0.44	7F 11 MON NO 1 ENG OIL QTY INDIC
702.08	702.52	0.44	7F 17 MON NO 2 ENG OIL QTY INDIC
702.52	702.96	0.44	7F 13 MON NO 1 ENG VIBRATION AMPLITUDE INDIC
702.52	702.96	0.44	7F 20 MON NO 2 ENG VIBR AMPLITUDE INDIC
700.00			100080 MON INSTRUMENTS ON FINAL APP - F
700.00			105L12 REACH 170 KCAS
710.00			100047 MON INSTRUMENTS ON FINAL APP
710.00	720.00	10.00	3E 03 MONITOR LOCALIZER INDICATOR ON FDI
710.00	720.00	10.00	3E 04 MON A/C POSITION RELATIVE TO SELECTED COURSE ON CI

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SINCE MISSION START BEGINNING	END	ACTIVITY TIME	EVENT/PROCEDURE TASK		
710.00	720.00	10.00	3B	03	MON GLIDE SLOPE ATT INDIC ON FDI
710.00	720.00	10.00	3A	10	MONITOR AIRSPEED INDIC
710.00	720.00	10.00	3H	06	MON ALTIMETER
710.00	720.00	10.00	3L	02	MON VERTICAL SPEED INDIC
720.00			100047		MON INSTRUMENTS ON FINAL APP
720.00	730.00	10.00	3B	02	MONITOR LOCALIZER INDICATOR ON FDI
720.00	730.00	10.00	3E	04	MON A/C POSITION RELATIVE TO SELECTED COURSE ON CI
720.00	730.00	10.00	3B	03	MON GLIDE SLOPE ATT INDIC ON FDI
720.00	730.00	10.00	3A	10	MONITOR AIRSPEED INDIC
720.00	730.00	10.00	3H	06	MON ALTIMETER
720.00	730.00	10.00	3L	02	MON VERTICAL SPEED INDIC
730.00			100047		MON INSTRUMENTS ON FINAL APP
730.00	740.00	10.00	3B	02	MONITOR LOCALIZER INDICATOR ON FDI
730.00	740.00	10.00	3E	04	MON A/C POSITION RELATIVE TO SELECTED COURSE ON CI
730.00	740.00	10.00	3B	03	MON GLIDE SLOPE ATT INDIC ON FDI
730.00	740.00	10.00	3A	10	MONITOR AIRSPEED INDIC
730.00	740.00	10.00	3H	06	MON ALTIMETER
730.00	740.00	10.00	3L	02	MON VERTICAL SPEED INDIC
730.00			00EV21		PILOT EXT VIS SCAN
740.00			100069		SET SPEED BRAKES
744.00			100048		MON ADF/RMI-2
744.00	745.20	1.20	8E	28	MON ADF NO.1 POINTER ON ADF/RMI 2 INDIC
745.00			100080		MON INSTRUMENTS ON FINAL APP - P
745.00			10BL13		CROSS REIFF
748.00			100070		SET AUTO BRAKES
748.00	750.02	2.02	4D	40	SET AUTO BRAKE SEL SW TO MED
750.02	750.36	0.34	4D	41	MON AUTO BRAKE INOP LT OFF
755.00			00EV01		C/P EXT VIS SCAN
755.00	760.00	5.00	8A	10	PILOT EXTERNAL VISION SCAN
765.00			100047		MON INSTRUMENTS ON FINAL APP
765.00	775.00	10.00	3B	02	MONITOR LOCALIZER INDICATOR ON FDI
765.00	775.00	10.00	3E	04	MON A/C POSITION RELATIVE TO SELECTED COURSE ON CI
765.00	775.00	10.00	3B	03	MON GLIDE SLOPE ATT INDIC ON FDI
765.00	775.00	10.00	3A	10	MONITOR AIRSPEED INDIC
765.00	775.00	10.00	3H	06	MON ALTIMETER
765.00	775.00	10.00	3L	02	MON VERTICAL SPEED INDIC
775.00			100047		MON INSTRUMENTS ON FINAL APP

SINCE MISSION START		ACTIVITY TIME	EVENT/PROCEDURE TASK
BEGINNING	END		
775.00	785.00	10.00	3R 02 MONITOR LOCALIZER INDICATOR ON FDI
775.00	785.00	10.00	3B 04 MON A/C POSITION RELATIVE TO SELECTED COURSE ON CI
775.00	785.00	10.00	3R 03 MON GLIDE SLOPE ATT INDIC ON FDI
775.00	785.00	10.00	3A 10 MONITOR AIRSPEED INDIC
775.00	785.00	10.00	3H 08 MON ALTIMETER
775.00	785.00	10.00	3L 02 MON VERTICAL SPEED INDIC
775.00			160050 MON INSTRUMENTS ON FINAL APP - P
800.00			160058 REPORT RUNWAY IN SIGHT
800.00	802.00	2.00	8A 01 VIEW RUNWAY AHEAD
802.00	803.00	1.00	1P160074 CALL OUT -(RUNWAY IN SITE)
805.00			00EV21 PILOT EXT VIS SCAN
808.00			160018 FLAP SET PROCEDURE
808.00	808.70	0.70	1P 10 MONITOR CALL-OUT
810.59	812.92	2.33	4E 15 MONITOR FLAP POSITION INDICATOR
812.71	815.21	2.50	4E 16 CHECK FLAP LEVER AND POSITION INDIC AGREE
811.69	812.86	1.17	4N 03 MON LE FLAPS-IN-TRANSIT LT ON
812.86	814.03	1.17	4N 04 MON LE FLAPS-IN-TRANSIT LT OFF
808.00			160025 SET FLAPS TO FLAPS 15
809.00	811.48	2.48	4E 11 SET FLAP CONT LEVER TO FLAPS 15
813.00	813.70	0.70	1P160062 CALL OUT -(FLAPS 15)
812.00			160042 MON ADF/RMI-1
815.00			160059 CROSS RWY 08 OUTER MARKER
815.00	815.72	0.72	3V 11 MONITOR OUTER MARKER LT ON AND AUDIBLE SIGNAL
817.00	818.80	1.80	1P 13 MONITOR CALL-OUT
815.00			16BL14 CROSS CATTA LOM-GEAR THEN EXTENDED AND 155 KCAS MAINTAINED
815.00			160049 MON RADIO ALTIMETER
815.00	817.00	2.00	3J 01 MON RADIO ALT ALTITUDE INDIC
820.00			160060 EXTEND LANDING GEAR
820.00	823.27	3.27	4D 03 SET LANDING GEAR LEVER TO DOWN POSITION
823.00	823.54	0.54	4D 05 MONITOR NOSE GEAR DOWN AND LOCKED LT ON
823.50	824.04	0.54	4D 09 MONITOR LEFT/RT GEAR DOWN AND LOCKED LT ON
820.00			160050 MON INSTRUMENTS ON FINAL APP - P
845.00			160082 LANDING CHECKLIST
845.00	846.00	1.00	8B090001 READ NEXT ITEM ON CHECKLIST ON CONTROL COLUMN PLACARD
847.00	847.60	0.60	1P160076 CALL OUT -(RECALL)
847.60	848.00	0.40	1P160077 CALL OUT -(CHECKED)

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SINCE MISSION START		ACTIVITY	EVENT/PROCEDURE	
BEGINNING	END	TIME	TASK	
848.00	849.00	1.00	08090001	READ NEXT ITEM ON CHECKLIST ON CONTROL COLUMN PLACARD
850.00	850.70	0.70	1P100078	CALL OUT -(SPEED BRAKES)
851.00	852.30	1.30	1P 02	MONITOR CALL-OUT
852.50	853.50	1.00	08090001	READ NEXT ITEM ON CHECKLIST ON CONTROL COLUMN PLACARD
854.50	855.20	0.70	1P100080	CALL OUT -(LANDING GEAR)
855.20	856.20	1.00	1P100081	CALL OUT -(DOWN, THREE GREEN)
856.20	857.20	1.00	08090001	READ NEXT ITEM ON CHECKLIST ON CONTROL COLUMN PLACARD
858.20	858.60	0.40	1P100082	CALL OUT -(FLAPS)
858.60	859.70	1.10	1P100083	CALL OUT -(FIFTEEN GREEN LIGHT)
861.10	862.20	1.10	1P100084	CALL OUT -(CHECKLIST COMPLETE)
861.10	862.20	1.10	1P 12	MONITOR CALL-OUT
860.00			00EV21	PILOT EXT VIS SCAN
863.00			100080	MON INSTRUMENTS ON FINAL APP - P
865.00			00EV02	C/P EXT VIS SCAN
865.00	875.00	10.00	0A 10	PILOT EXTERNAL VISION SCAN
877.00			100047	MON INSTRUMENTS ON FINAL APP
877.00	887.00	10.00	3R 03	MONITOR LOCALIZER INDICATOR ON FDI
877.00	887.00	10.00	3G 04	MON A/C POSITION RELATIVE TO SELECTED COURSE ON CI
877.00	887.00	10.00	3R 03	MON GLIDE SLOPE ATT INDIC ON FDI
877.00	887.00	10.00	3A 10	MONITOR AIRSPEED INDIC
877.00	887.00	10.00	3H 08	MON ALTIMETER
877.00	887.00	10.00	3L 02	MON VERTICAL SPEED INDIC
883.00			00EV21	PILOT EXT VIS SCAN
889.00			030007	ENGINE INSTRUMENT SCAN
889.00	889.44	0.44	7F 29	MON ENG NO 1 EPR IND
889.00	889.44	0.44	7F 30	MON ENG NO 2 EPR IND
889.44	889.88	0.44	7F 21	MON NO 1 ENG N1 IND
889.44	889.88	0.44	7F 22	MON NO 2 ENG N1 IND
889.88	890.32	0.44	7F 31	MON ENG NO 1 EXH GAS TEMP IND
889.88	890.32	0.44	7F 32	MON ENG NO 2 EXH GAS TEMP IND
890.32	890.76	0.44	7F 23	MON NO 1 ENG N2 IND
890.32	890.76	0.44	7F 24	MON NO 2 ENG N2 IND
890.76	891.20	0.44	7F 33	MON ENG NO 1 FUEL FLOW INDIC
890.76	891.20	0.44	7F 34	MON ENG NO 2 FUEL FLOW INDIC
891.20	891.64	0.44	7F 09	MON NO 1 ENG OIL PRESS INDIC
891.64	892.08	0.44	7F 10	MON NO 1 ENG OIL TEMP INDIC
891.64	892.08	0.44	7F 18	MON NO 2 ENG OIL TEMP INDIC
892.08	892.52	0.44	7F 11	MON NO 1 ENG OIL QTY INDIC

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SINCE MISSION START        ACTIVITY            EVENT/PROCEDURE
BEGINNING      END         TIME                   TASK

892.08       892.52           0.44                 7F     19   MON NO 2 ENG OIL
                                                                QTY INDIC

892.52       892.96           0.44                 7F     12   MON NO 1 ENG VIBRA-
                                                                TION AMPLITUDE INDIC

892.52       892.96           0.44                 7F     20   MON NO 2 ENG VIBR
                                                                AMPLITUDE INDIC

893.00                                          100080    MON INSTRUMENTS ON
                                                          FINAL APP -  P

895.00                                          100049   MON RADIO ALTIMETER

895.00       897.00           2.00                 5J     01   MON RADIO ALT
                                                                ALTITUDE INDIC

900.00                                          00EV04   C/P EXT VIS SCAN

900.00       920.00          20.00                 5A     10    PILOT  EXTERNAL
                                                                VISION SCAN

923.00                                          100066   DESCEND THRU
                                                         -DECISION HEIGTH

923.00       925.50           2.50                 3R     13   MON DECISION HGT LT
                                                               ON FDI

925.50       926.30           0.80              1P100066   CALL OUT -(DECISION
                                                               HEIGHT)

924.00                                          100068   CONTROL AIRCRAFT
                                                         THRU TOUCHDOWN

925.00                                          100064   CROSS RWY ON MIDDLE
                                                         MARKER

925.00       926.01           1.01                 5V     13   MONITOR MIDDLE
                                                               MARKER ANNUN LT ON
                                                               AND AUDIBLE SIGNAL

928.00                                          10BL15   CROSS MIDDLE MARKER
930.00                                          00EV02   C/P EXT VIS SCAN
930.00       940.00          10.00                 6A     10    PILOT  EXTERNAL
                                                               VISION SCAN

930.00                                          000003   FLIGHT INSTRUMENT
                                                         SCAN - A

940.00                                          100047   MON INSTRUMENTS ON
                                                         FINAL APP

940.00       950.00          10.00                 3R     02   MONITOR LOCALIZER
                                                               INDICATOR ON FDI

940.00       950.00          10.00                 3S     04   MON A/C POSITION
                                                               RELATIVE TO SELECTED
                                                               COURSE ON CI

940.00       950.00          10.00                 3R     03   MON GLIDE SLOPE
                                                               ATT INDIC ON FDI

940.00       950.00          10.00                 3A     10   MONITOR AIRSPEED
                                                               INDIC

940.00       950.00          10.00                 3H     06   MON ALTIMETER
940.00       950.00          10.00                 3L     02   MON VERTICAL SPEED
                                                               INDIC

941.00                                          10BL16   CROSS RW THRESHOLD
950.00                                          00EV02   C/P EXT VIS SCAN
950.00       960.00          10.00                 5A     10    PILOT  EXTERNAL
                                                               VISION SCAN

950.00                                          100069   TOUCHDOWN
950.00                                          10BL17   TOUCHDOWN
950.00                                          000003   FLIGHT INSTRUMENT
                                                         SCAN - A

960.00                                          100047   MON INSTRUMENTS ON
                                                         FINAL APP

960.00       970.00          10.00                 3R     02   MONITOR LOCALIZER
                                                               INDICATOR ON FDI

960.00       970.00          10.00                 3S     04   MON A/C POSITION
                                                               RELATIVE TO SELECTED
                                                               COURSE ON CI

960.00       970.00          10.00                 3R     03   MON GLIDE SLOPE
                                                               ATT INDIC ON FDI

960.00       970.00          10.00                 3A     10   MONITOR AIRSPEED
                                                               INDIC

960.00       970.00          10.00                 3H     06   MON ALTIMETER
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SINCE MISSION START		ACTIVITY TIME	EVENT/PROCEDURE TASK
BEGINNING	END		
960.00	970.00	10.00	3L 03 MON VERTICAL SPEED INDIC
970.00			00EV02 C/P EXT VIS SCAN
970.00	980.00	10.00	3A 10 PILOT EXTERNAL VISION SCAN
979.00			FS0603 FLIGHT INSTRUMENT SCAN - A
984.00			18DL71 HANDOFF TO GROUND
984.00	985.60	1.60	10102201 MON INFORMATION MANAGEMENT ATTENTION
985.60	987.60	2.00	10102200 MON INFORMATION MANAGEMENT DISPLAY (MODE-S UPLINK PEND) AMBER
987.60	989.40	1.80	12100001 LINE SELECT (ATC UPLINKS PENDING)
989.40	997.40	8.00	10102207 READ -EXIT RUNWAY NEXT INTERSECTION. MONITOR GROUND 121.9 WHEN CLEAR OF RUNWAY
997.40	999.20	1.80	12100041 LINE SELECT (WILCO)
999.00			000003 FLIGHT INSTRUMENT SCAN - A
1000.00			18DL72 TUNE AND MONITOR ATC GRND ON 121.9/VHF-2L
1000.00	1004.80	4.80	1B 01 MON VHF-2L FREQ IND
1000.00	1002.80	2.80	1B 02 SET VHF-2 FREQ-WHOLE NO.S
1002.80	1004.60	1.80	1B 03 SET VHF-2L FREQ - FRACTIONS
1004.80	1006.40	1.60	1B 05 SET VHF-2 COMM TFR SW TO LEFT
1006.40	1008.40	2.00	1B 04 ADJ VHF-2 VOLUME
1009.00			18DL73 TAXI CLEARANCE FROM
1009.00	1010.60	1.60	10102201 MON INFORMATION MANAGEMENT ATTENTION
1010.60	1012.60	2.00	10102202 MON INFORMATION MANAGEMENT DISPLAY (MODE-S UPLINK PEND) AMBER
1012.60	1014.40	1.80	12100001 LINE SELECT (ATC UPLINKS PENDING)
1014.40	1019.40	5.00	10102208 READ -TAXI TO RAMP VIA SE/SW TAXIWAY.
1019.40	1021.20	1.80	12100041 LINE SELECT (WILCO)
1020.00			00EV01 C/P EXT VIS SCAN
1020.00	1025.00	5.00	3A 10 PILOT EXTERNAL VISION SCAN

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B.3 NORMAL ILS APPROACH—ADVANCED FLIGHT DECK

Flying Pilot

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*****************                                                                      
* UNSHIFTED     *            ****************************************            NOV19 1986
*****************            *                                      *
                             *        MISSION SCENARIO REPORT       *
                             *                                      *
                             *  MISSION - CURRENT NAS               *
                             *            ILS AP-BASE LN.           *
                             *                                      *
                             *  CONFIGURATION - 737 ADVCND FLT DCK  *
                             *                                      *
                             *  CREWMEMBER - PILOT                  *
                             *                                      *
                             ****************************************

            TIME INTERVAL (SECS)      TOTAL                        FLIGHT PHASE
            SINCE MISSION START       ACTIVITY                         EVENT/PROCEDURE
            BEGINNING       END       TIME                                 TASK

               0.00                                                 10BL BASELINE AFS ILS APP

               0.00                                                     10BL01   CROSS LOWEN INTERSEC
                                                                                 TION AT 250 KCAS AND
                                                                                 14000 FEET.ATL CENTR
                                                                                 HAS PREVIOUSLY INSTR
                                                                                 UCTED NASA 515 TO
                                                                                 CONTACT ATL APPR AT
                                                                                 LOWEN.VHF-2R HAS AL-
                                                                                 READY BEEN TUNED TO
                                                                                 CORRECT FREQ-126.9.

               0.00                                                     100000   CONTACT ATL APPROACH
                                                                                 ON 126.9

               9.40        13.40          4.00                            1P10YY00  NASA 515,ATL APPR,
                                                                                    ROGER.

               0.00                                                     100000   DROP OUT OF HOR
                                                                                 AND VERT PATH TO
                                                                                 FPA,TKA,AND CAS
                                                                                 AUTO FLT MODES
                                                                                 ENTER FPA IN MCP

               0.00         0.78          0.78                              2H    38   MON HOR PATH MODE LT
                                                                                       DARK - HOR PATH MODE
                                                                                       DISENGAGED

               0.00         0.78          0.78                              2H    42   MON VERT PATH MODE
                                                                                       LT DARK - VERT PATH
                                                                                       MODE DISENGAGED

               0.80         2.14          1.34                              2H    08   MON AUTO MODE LT
                                                                                       GREEN - AUTO MODE
                                                                                       ENGAGED

               2.10         2.87          0.77                              2H    15   MON TKA SEL MODE LT
                                                                                       GREEN - TKA SEL MODE
                                                                                       ENGAGED

               2.10         2.87          0.77                              2H    22   MONITOR FPA SEL MODE
                                                                                       LT GREEN - FPA SEL
                                                                                       MODE ENGAGED

               3.10         5.55          2.45                              2H    26   ROTATE FPA SEL KNOB
               3.10         3.87          0.77                              2H    24   MONITOR FPA SEL MODE
                                                                                       LT BLUE - FPA SEL
                                                                                       MODE PRESELECTED

               4.30         5.38          1.08                              2H    27   READ FPA SEL VALUE
                                                                                       ON DIGITAL INDIC

               5.40         7.40          2.00                              2K    32   MON ALT/RNG SYMBOLS
               7.40         8.80          1.40                              2H    21   PRESS FPA SEL MODE
                                                                                       SW

               8.80         9.57          0.77                              2H    22   MONITOR FPA SEL MODE
                                                                                       LT GREEN - FPA SEL
                                                                                       MODE ENGAGED

              10.00                                                     000048   FLIGHT INSTRUMENT
                                                                                 SCAN -A2

              10.00        40.00         30.00                              2J    02   MON PITCH ATTITUDE
                                                                                       INDIC

              10.00        40.00         30.00                              3L    02   MON VERTICAL SPEED
                                                                                       INDIC

              10.00        40.00         30.00                              8A    10   MONITOR AIRSPEED
                                                                                       INDIC

              10.00        40.00         30.00                              2K    14   MON  MAP VIDEO
              10.00        40.00         30.00                              2K    46   MON STRAIGHT TREND
                                                                                       VECTOR SYMBOL

              10.00        40.00         30.00                              2K    38   MON CURVED TREND
                                                                                       VECTOR SYMBOLS

              40.00                                                     000048   FLIGHT INSTRUMENT
                                                                                 SCAN -A2

              40.00        70.00         30.00                              2J    02   MON PITCH ATTITUDE
                                                                                       INDIC
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SINCE MISSION START          ACTIVITY                                         EVENT/PROCEDURE
BEGINNING       END          TIME                                               TASK
  40.00        70.00          30.00                                             3L     02    MON VERTICAL SPEED
                                                                                           INDIC

  40.00        70.00          30.00                                             3A     10    MONITOR AIRSPEED
                                                                                           INDIC

  40.00        70.00          30.00                                             2K     14    MON  MAP VIDEO

  40.00        70.00          30.00                                             2K     46    MON STRAIGHT TREND
                                                                                           VECTOR SYMBOL

  40.00        70.00          30.00                                             2K     38    MON CURVED TREND
                                                                                           VECTOR SYMBOLS

  70.00                                                                       000048   FLIGHT INSTRUMENT
                                                                                       SCAN -A2

  70.00       100.00          30.00                                             2J     02    MON PITCH ATTITUDE
                                                                                           INDIC

  70.00       100.00          30.00                                             3L     02    MON VERTICAL SPEED
                                                                                           INDIC

  70.00       100.00          30.00                                             3A     10    MONITOR AIRSPEED
                                                                                           INDIC

  70.00       100.00          30.00                                             2K     14    MON  MAP VIDEO
  70.00       100.00          30.00                                             2K     46    MON STRAIGHT TREND
                                                                                           VECTOR SYMBOL

  70.00       100.00          30.00                                             2K     38    MON CURVED TREND
                                                                                           VECTOR SYMBOLS

  15.00                                                                       100013   SET NAV-1 TO RUNWAY
                                                                                       9L ILS -109.3

  31.50        34.00           2.50                                             1P     12    MONITOR CALL-OUT
  34.00        36.25           2.25                                             5G     04    MON VOR POINTER NO.1
                                                                                           ON VOR/RMI 1 INDIC

  60.00                                                                       00EV30   PILOT EXT VIS SCAN
  60.00       110.00          50.00                                             6A     12      PILOT EXTERNAL
                                                                                           VISION SCAN

  38.00                                                                       100030   SET ADF-1 TO CATTA
                                                                                          -375KC

  45.73        47.23           1.50                                             1P     02    MONITOR CALL-OUT

  48.00                                                                       100040   SET ADF-2 TO FLANC
                                                                                          -344

  54.00        55.50           1.50                                             1P     02    MONITOR CALL-OUT
  59.00                                                                       100050   SET DECISION HEIGTH
                                                                                       ON RADIO ALTIMETER

  64.00                                                                       030007   ENGINE INSTRUMENT
                                                                                       SCAN

  70.00                                                                       100005   DESCENT AND APPROACH
                                                                                       CHECKLIST - 1

  70.00        72.00           2.00                                               1P100043   CALL OUT-[DESCENT
                                                                                           AND APPROACH CHECK-
                                                                                           LIST]

  85.00        86.00           1.00                                             1P     10    MONITOR CALL-OUT
  87.00        87.80           0.80                                             1P     07    MONITOR REPORT
  90.00        91.80           1.80                                             1P     13    MONITOR CALL-OUT
  98.00        98.40           0.40                                             1P     16    MONITOR REPORT
 100.60                                                                       100006   DESCENT AND APPROACH
                                                                                       CHECKLIST - 2

 102.00       102.80           0.80                                             1P     11    MONITOR CALL-OUT
 103.30       106.84           3.54                                             7M     03     SET ENG NO.1 START
                                                                                           SW TO FLT

 106.54       108.28           1.74                                             7M     06     SET ENG NO.2 START
                                                                                           SW TO FLT

 108.50       109.00           0.50                                               1P100049   CALL OUT [FLIGHT]
 111.00       112.10           1.10                                             1P     12    MONITOR CALL-OUT
 114.20       114.50           0.30                                             1P     16    MONITOR REPORT
 116.50       117.90           1.40                                             1P     12    MONITOR CALL-OUT
 123.40       124.70           1.30                                             1P     09    MONITOR REPORT
 128.00                                                                       100007   DESCENT AND APPROACH
                                                                                       CHECKLIST - 3

 128.00       129.50           1.50                                             1P     02    MONITOR CALL-OUT
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SINCE MISSION START BEGINNING	END	ACTIVITY TIME	EVENT/PROCEDURE TASK		
146.00	147.00	1.00	1P	14	MONITOR CALL-OUT
148.00	150.57	2.57	3A	07	MON V-REF BUG SETTING
148.00	150.57	2.57	3A	08	SET V-REF BUG
151.00	154.00	3.00	3A	13	CAPT CHECK F.O.<S V-REF BUG SETTING
154.00	155.50	1.50	1P	06	MONITOR REPORT
157.00	158.30	1.30	1P	02	MONITOR CALL-OUT
165.00			000007		ENGINE INSTRUMENT SCAN
180.00			00EV08		C/P EXT VIS SCAN
185.00			000051		FLIGHT INSTRUMENT SCAN -A1
185.00	195.00	10.00	3J	02	MON PITCH ATTITUDE INDIC
185.00	195.00	10.00	3L	02	MON VERTICAL SPEED INDIC
185.00	195.00	10.00	3A	10	MONITOR AIRSPEED INDIC
185.00	195.00	10.00	3K	14	MON MAP VIDEO
185.00	195.00	10.00	3K	46	MON STRAIGHT TREND VECTOR SYMBOL
185.00	195.00	10.00	3K	88	MON CURVED TREND VECTOR SYMBOLS
195.00			100045		MON ADF/RMI-2
195.00			100001		HANDOFF TO ATL FINAL APPROACH CONTROLLER
195.00	207.00	12.00	1P16ZZ01		N 616,TURN RT HDG270 DESCND AND MAINTAIN 6000 FT,CONTACT ATL APPR ON 127.25.
200.00			100061		ENTER/ARM NEW ALT IN MCP
200.00	202.47	2.47	2H	33	ROTATE ALT SEL KNOB
200.00	200.78	0.78	2H	31	MON ALT SEL MODE LT BLUE - ALT SEL MODE PRESELECTED
201.40	202.40	1.00	2H	34	READ ALT SEL VALUE ON DIGITAL INDIC
202.50	203.92	1.42	2H	28	PRESS ALT SEL MODE S SW
203.90	204.68	0.78	2H	30	MON ALT SEL MODE LT ORANGE - ALT SEL MODE ARMED
205.00			10BL02		BEGIN TURN TO DOWN-WIND LEG
205.00			150052		ENTER NEW HEADNG IN MCP
205.00	207.50	2.50	2H	10	ROTATE TKA SEL KNOB
205.00	206.11	1.11	2H	20	READ TKA SEL VALUE ON DIGITAL INDIC
207.50	208.27	0.77	2H	15	MON TKA SEL MODE LT GREEN - TKA SEL MODE ENGAGED
210.00			10BL03		DESCEND THRU 11000.
210.00			000051		FLIGHT INSTRUMENT SCAN -A1
210.00	220.00	10.00	3J	02	MON PITCH ATTITUDE INDIC
210.00	220.00	10.00	3L	02	MON VERTICAL SPEED INDIC
210.00	220.00	10.00	3A	10	MONITOR AIRSPEED INDIC
210.00	220.00	10.00	3K	14	MON MAP VIDEO
210.00	220.00	10.00	3K	46	MON STRAIGHT TREND VECTOR SYMBOL

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SINCE MISSION START          ACTIVITY                                EVENT/PROCEDURE
BEGINNING       END          TIME                                        TASK
210.00        220.00            10.00                                    2K    33   MON CURVED TREND
                                                                                   VECTOR SYMBOLS

219.00                                                               160092   TUNE ATL APPROACH
                                                                              ON 127.25

226.00                                                               160093   CONTACT ATL APPROACH
                                                                              ON 127.25

231.00        235.00             4.00                                    1P16TT90   NASA 515,ATL APPR,
                                                                                   ROGER.

220.00                                                               090048   FLIGHT INSTRUMENT
                                                                              SCAN -A2

220.00        250.00            30.00                                    2J    02   MON PITCH ATTITUDE
                                                                                   INDIC

220.00        250.00            30.00                                    3L    02   MON VERTICAL SPEED
                                                                                   INDIC

220.00        250.00            30.00                                    3A    10   MONITOR AIRSPEED
                                                                                   INDIC

220.00        250.00            30.00                                    2K    14   MON  MAP VIDEO
220.00        250.00            30.00                                    2K    46   MON STRAIGHT TREND
                                                                                   VECTOR SYMBOL

220.00        250.00            30.00                                    2K    33   MON CURVED TREND
                                                                                   VECTOR SYMBOLS

240.00                                                               00EV03   C/P EXT VIS SCAN

250.00                                                               090048   FLIGHT INSTRUMENT
                                                                              SCAN -A2

250.00        280.00            30.00                                    2J    02   MON PITCH ATTITUDE
                                                                                   INDIC

250.00        280.00            30.00                                    3L    02   MON VERTICAL SPEED
                                                                                   INDIC

250.00        280.00            30.00                                    3A    10   MONITOR AIRSPEED
                                                                                   INDIC

250.00        280.00            30.00                                    2K    14   MON  MAP VIDEO
250.00        280.00            30.00                                    2K    46   MON STRAIGHT TREND
                                                                                   VECTOR SYMBOL

250.00        280.00            30.00                                    2K    33   MON CURVED TREND
                                                                                   VECTOR SYMBOLS

280.00                                                               090048   FLIGHT INSTRUMENT
                                                                              SCAN -A2

280.00        310.00            30.00                                    2J    02   MON PITCH ATTITUDE
                                                                                   INDIC

280.00        310.00            30.00                                    3L    02   MON VERTICAL SPEED
                                                                                   INDIC

280.00        310.00            30.00                                    3A    10   MONITOR AIRSPEED
                                                                                   INDIC

280.00        310.00            30.00                                    2K    14   MON  MAP VIDEO
280.00        310.00            30.00                                    2K    46   MON STRAIGHT TREND
                                                                                   VECTOR SYMBOL

280.00        310.00            30.00                                    2K    33   MON CURVED TREND
                                                                                   VECTOR SYMBOLS

310.00                                                               090048   FLIGHT INSTRUMENT
                                                                              SCAN -A2

310.00        340.00            30.00                                    2J    02   MON PITCH ATTITUDE
                                                                                   INDIC

310.00        340.00            30.00                                    3L    02   MON VERTICAL SPEED
                                                                                   INDIC

310.00        340.00            30.00                                    3A    10   MONITOR AIRSPEED
                                                                                   INDIC

310.00        340.00            30.00                                    2K    14   MON  MAP VIDEO
310.00        340.00            30.00                                    2K    46   MON STRAIGHT TREND
                                                                                   VECTOR SYMBOL

310.00        340.00            30.00                                    2K    33   MON CURVED TREND
                                                                                   VECTOR SYMBOLS

340.00                                                               090048   FLIGHT INSTRUMENT
                                                                              SCAN -A2

340.00        370.00            30.00                                    2J    02   MON PITCH ATTITUDE
                                                                                   INDIC

340.00        370.00            30.00                                    3L    02   MON VERTICAL SPEED
                                                                                   INDIC
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SINCE MISSION START BEGINNING	END	ACTIVITY TIME	EVENT/PROCEDURE TASK
340.00	370.00	30.00	3A 10 MONITOR AIRSPEED INDIC
340.00	370.00	30.00	2K 14 MON MAP VIDEO
340.00	370.00	30.00	2K 40 MON STRAIGHT TREND VECTOR SYMBOL
340.00	370.00	30.00	2K 38 MON CURVED TREND VECTOR SYMBOLS
288.00			030007 ENGINE INSTRUMENT SCAN
385.00			00EV30 C/P EXT VIS SCAN
340.00			00EV04 C/P EXT VIS SCAN
363.00			030007 ENGINE INSTRUMENT SCAN
370.00			100L04 DESCEND THRU 6000.
370.00			100004 ALTITUDE STEP DOWN FROM ATL APPROACH
370.00	375.00	5.00	1P10XX04 NASA 515,DESCEND AND MAINTAIN 6000 FT.
375.00			100001 ENTER/ARM NEW ALT IN MCP
375.00	377.47	2.47	2H 33 ROTATE ALT ENG KNOB
375.00	375.78	0.78	2H 31 MON ALT ENG MODE LT BLUE - ALT ENG MODE PRESELECTED
376.40	377.46	1.06	2H 34 READ ALT ENG VALUE ON DIGITAL INDIC
377.50	378.92	1.42	2H 28 PRESS ALT ENG MODE S SW
378.90	379.68	0.78	2H 30 MON ALT ENG MODE LT ORANGE - ALT ENG MODE ARMED
385.00			090048 FLIGHT INSTRUMENT SCAN -A2
385.00	415.00	30.00	2J 02 MON PITCH ATTITUDE INDIC
385.00	415.00	30.00	3L 02 MON VERTICAL SPEED INDIC
385.00	415.00	30.00	3A 10 MONITOR AIRSPEED INDIC
385.00	415.00	30.00	2K 14 MON MAP VIDEO
385.00	415.00	30.00	2K 40 MON STRAIGHT TREND VECTOR SYMBOL
385.00	415.00	30.00	2K 38 MON CURVED TREND VECTOR SYMBOLS
415.00			090048 FLIGHT INSTRUMENT SCAN -A2
415.00	445.00	30.00	2J 02 MON PITCH ATTITUDE INDIC
415.00	445.00	30.00	3L 02 MON VERTICAL SPEED INDIC
415.00	445.00	30.00	3A 10 MONITOR AIRSPEED INDIC
415.00	445.00	30.00	2K 14 MON MAP VIDEO
415.00	445.00	30.00	2K 40 MON STRAIGHT TREND VECTOR SYMBOL
415.00	445.00	30.00	2K 38 MON CURVED TREND VECTOR SYMBOLS
445.00			090048 FLIGHT INSTRUMENT SCAN -A2
445.00	475.00	30.00	2J 02 MON PITCH ATTITUDE INDIC
445.00	475.00	30.00	3L 02 MON VERTICAL SPEED INDIC
445.00	475.00	30.00	3A 10 MONITOR AIRSPEED INDIC
445.00	475.00	30.00	2K 14 MON MAP VIDEO

SINCE MISSION START BEGINNING	END	ACTIVITY TIME	EVENT/PROCEDURE TASK
445.00	475.00	30.00	2K 46 MON STRAIGHT TREND VECTOR SYMBOL
445.00	475.00	30.00	2K 55 MON CURVED TREND VECTOR SYMBOLS
475.00			000048 FLIGHT INSTRUMENT SCAN -A2
475.00	505.00	30.00	3J 02 MON PITCH ATTITUDE INDIC
475.00	505.00	30.00	3L 02 MON VERTICAL SPEED INDIC
475.00	505.00	30.00	3A 10 MONITOR AIRSPEED INDIC
475.00	505.00	30.00	2K 14 MON MAP VIDEO
475.00	505.00	30.00	2K 46 MON STRAIGHT TREND VECTOR SYMBOL
475.00	505.00	30.00	2K 55 MON CURVED TREND VECTOR SYMBOLS
505.00			000051 FLIGHT INSTRUMENT SCAN -A1
505.00	515.00	10.00	3J 02 MON PITCH ATTITUDE INDIC
505.00	515.00	10.00	3L 02 MON VERTICAL SPEED INDIC
505.00	515.00	10.00	3A 10 MONITOR AIRSPEED INDIC
505.00	515.00	10.00	2K 14 MON MAP VIDEO
505.00	515.00	10.00	2K 46 MON STRAIGHT TREND VECTOR SYMBOL
505.00	515.00	10.00	2K 55 MON CURVED TREND VECTOR SYMBOLS
385.00			00EV06 C/P EXT VIS SCAN
430.00			030007 ENGINE INSTRUMENT SCAN
440.00			00EV03 C/P EXT VIS SCAN
450.00			180002 TUNE ATIS -119.65
458.00	482.00	24.00	1A 18 MON VHF-1 COMM AUDIO
458.00	461.42	3.42	1P180001 MON RADIO COMM - (INFORMATION LIMA ONE SEVEN ZERO FIVE OBSERVATION- TWO
461.42	465.98	4.56	1P180002 FIVE HUNDRED SCATTERED CEILING FOUR THOUSAND BROKEN. VISIBILITY ONE SIX.
465.98	470.54	4.56	1P180003 TEMPERATURE FIVE NINER. WIND ONE ONE ZERO DEGREES AT TEN GUSTING TO ONE SEVEN
470.54	475.10	4.56	1P180004 . ALTIMETER TWO - NINER EIGHT FOUR. SIMULTANEOUS PARALLEL APPROACHES IN
475.10	479.66	4.56	1P180005 OPERATION ON RUNWAYS EIGHT LEFT AND NINER RIGHT. ADVISE CONTROLLER ON INITIAL
479.66	481.94	2.28	1P180006 CONTACT YOU HAVE INFORMATION LIMA.)
480.00			180048 MON ADF/RMI-2
480.00			180L05 CROSS FT HDG
485.00			00EV08 C/P EXT VIS SCAN
480.00			180003 SET ALTIMETER BARO SETTING TO 29.84
480.00	483.50	3.50	1P 18 MONITOR CALL-OUT
484.00			140032 ALTIMETER BARO SET PROC.
484.00	486.65	2.65	3H 04 MONITOR ALTIMETER BARO SETTING INDIC
484.00	486.65	2.65	3H 03 SET ALTIMETER BARO SETTING CONTROL

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SINCE MISSION START BEGINNING	END	ACTIVITY TIME	EVENT/PROCEDURE TASK
513.00			000007 ENGINE INSTRUMENT SCAN
519.00			100041 MON VOR/RMI-1
519.00	521.00	2.00	5G 04 MON VOR POINTER NO.1 ON VOR/RMI 1 INDIC
519.00	521.00	2.00	5G 05 MON VOR POINTER NO.2 ON VOR/RMI 1 INDIC
520.00			100095 VECTOR FOR BASE LEG FROM ATL APPROACH
520.00	525.00	5.00	1P16ZZ96 NASA 515,TURN LEFT HEADING 100.
523.00			100082 ENTER NEW HEADNG IN MCP
523.00	525.50	2.50	2H 19 ROTATE TKA SEL KNOB
525.00	526.11	1.11	2H 26 READ TKA SEL VALUE ON DIGITAL INDIC
525.50	526.27	0.77	2H 15 MON TKA SEL MODE LT GREEN - TKA SEL MODE ENGAGED
533.00			100L06 BEGIN TURN TO BASE
540.00			140023 REPORT 1000 FT TO LEVEL OFF
542.00	543.70	1.70	1P 11 MONITOR CALL-OUT
550.00			00EV03 C/P EXT VIS SCAN
555.00			000061 FLIGHT INSTRUMENT SCAN -A1
555.00	565.00	10.00	2J 02 MON PITCH ATTITUDE INDIC
555.00	565.00	10.00	2L 02 MON VERTICAL SPEED INDIC
555.00	565.00	10.00	2A 10 MONITOR AIRSPEED INDIC
555.00	565.00	10.00	2K 14 MON MAP VIDEO
555.00	565.00	10.00	2K 46 MON STRAIGHT TREND VECTOR SYMBOL
555.00	565.00	10.00	2K 32 MON CURVED TREND VECTOR SYMBOLS
565.00			100041 MON VOR/RMI-1
565.00	567.00	2.00	5G 04 MON VOR POINTER NO.1 ON VOR/RMI 1 INDIC
565.00	567.00	2.00	5G 05 MON VOR POINTER NO.2 ON VOR/RMI 1 INDIC
569.00			100042 MON ADF/RMI-1
569.00	571.00	2.00	5D 28 MON ADF POINTER NO.1 ON ADF/RMI 1 INDIC
569.00	571.00	2.00	5D 29 MON ADF POINTER NO.2 ON ADF/RMI 1 INDIC
570.00			100096 VECTOR TO INTERCEPT AND FINAL APPROACH CLEARANCE FROM ATL APPROACH CONTROL
570.00	580.00	10.00	1P10ZZ90 NASA 515,12 MILES FROM OM TURN LT HDG 110.MAINTAIN 3000 FT UNTIL CROSSING BAHRR
580.00	587.00	7.00	1P10ZZ98 CLEARED FOR ILS RUNWAY 8 LEFT APPROACH. CONTACT TOWER ON 119.5 AT BAHRR.
575.00			100082 ENTER NEW HEADNG IN MCP
575.00	577.50	2.50	2H 19 ROTATE TKA SEL KNOB
575.00	576.11	1.11	2H 20 READ TKA SEL VALUE ON DIGITAL INDIC
577.50	578.27	0.77	2H 15 MON TKA SEL MODE LT GREEN - TKA SEL MODE ENGAGED
575.00			100L07 TURN TO INTERCEPT FINAL APPR. COURSE

SINCE MISSION START BEGINNING	END	ACTIVITY TIME	EVENT/PROCEDURE	TASK
595.00			100083 ARM LAND MODE	
595.00	597.13	2.13		2H 10 PRESS LAND MODE SW
597.20	598.25	1.05		2H 12 MON LAND MODE LT ORANGE - LAND MODE ARMED
597.00			100034 TUNE ATLANTA TOWER -119.5	
600.00			100070 FLIGHT INSTRUMENT SCAN -A1, PILOT	
600.00	610.00	10.00		2K 14 MON MAP VIDEO
600.00	610.00	10.00		2K 40 MON STRAIGHT TREND VECTOR SYMBOL
600.00	610.00	10.00		2K 33 MON CURVED TREND VECTOR SYMBOLS
600.00	610.00	10.00		2J 05 MON FLT PATH ANGLE INDIC
600.00	610.00	10.00		2J 04 MON FLT PATH ACCEL INDIC
600.00	610.00	10.00		2J 01 MON ROLL ATT INDIC
600.00	610.00	10.00		2J 19 MON PITCH REF INDIC
600.00	610.00	10.00		3A 10 MONITOR AIRSPEED INDIC
607.00			100073 FLIGHT INSTRUMENT SCAN -A1, COPILOT	
610.00			100084 CAPTURE AN ALT IN ALT SEL MODE	
610.00	610.78	0.78		2H 20 MONITOR ALT ENG MODE LT GREEN - ALT ENG MODE ENGAGED
611.00	611.77	0.77		2H 25 MONITOR FPA SEL MODE LT DARK - FPA SEL MODE DISENGAGED
610.00			100L08 LEVEL OFF AT 8000 FT BEGIN DECEL FROM 250 TO 210 KCAS	
617.00			100073 FLIGHT INSTRUMENT SCAN -A1, COPILOT	
613.00			100085 ENTER NEW SPEED IN CAS WINDOW	
613.00	615.45	2.45		2H 47 ROTATE CAS ENT KNOB
613.00	614.04	1.04		2H 48 READ CAS ENG VALUE ON DIGITAL INDIC
615.50	616.28	0.78		2H 44 MON CAS ENG MODE LT GREEN - CAS MODE ENGAGED
623.00			100086 CAPTURE LOCALIZER	
623.00	625.19	2.19		2J 13 MON ILS BOX INDIC
625.00	626.50	1.50		1P 02 MONITOR CALL-OUT
625.00	625.77	0.77		2H 18 MON TKA SEL MODE LT DARK - TKA SEL MODE DISENGAGED
626.00			100071 FLIGHT INSTRUMENT SCAN -A2, PILOT	
626.00	656.00	30.00		2K 14 MON MAP VIDEO
626.00	656.00	30.00		2K 40 MON STRAIGHT TREND VECTOR SYMBOL
626.00	656.00	30.00		2K 33 MON CURVED TREND VECTOR SYMBOLS
626.00	656.00	30.00		2J 13 MON ILS BOX INDIC
626.00	656.00	30.00		2J 04 MON FLT PATH ACCEL INDIC
626.00	656.00	30.00		2J 01 MON ROLL ATT INDIC
626.00	656.00	30.00		2J 19 MON PITCH REF INDIC
626.00	656.00	30.00		3A 10 MONITOR AIRSPEED INDIC

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SINCE MISSION START		ACTIVITY TIME	EVENT/PROCEDURE TASK
BEGINNING	END		
627.00			160073 FLIGHT INSTRUMENT SCAN -A1, COPILOT
637.00			160073 FLIGHT INSTRUMENT SCAN -A1, COPILOT
643.00			160045 ANNUNCIATOR RECALL
647.00			160073 FLIGHT INSTRUMENT SCAN -A1, COPILOT
655.00			160041 MON VOR/RMI-1
655.00	657.00	2.00	5G 04 MON VOR POINTER NO.1 ON VOR/RMI 1 INDIC
655.00	657.00	2.00	5G 05 MON VOR POINTER NO.2 ON VOR/RMI 1 INDIC
657.00			160042 MON ADF/RMI-1
657.00	659.00	2.00	5D 28 MON ADF POINTER NO.1 ON ADF/RMI 1 INDIC
657.00	659.00	2.00	5D 29 MON ADF POINTER NO.2 ON ADF/RMI 1 INDIC
657.00			160046 MON ADF/RMI-2
660.00			16BL09 REACH 210 KCAS
660.00			160087 CAPTURE GLIDE SLOPE
660.00	662.19	2.19	2J 13 MON ILS BOX INDIC
662.00	663.05	1.05	2H 11 MON LAND MODE LT GREEN - LAND MODE ENGAGED
664.00			160061 CONTACT TOWER FOR FINAL LANDING CLEARANCE
674.40	681.40	7.00	1B 19 MON VHF-2 COMM AUDIO
674.40	678.40	4.00	1P160040 MON RADIO COMM - (NASA 515, NO. 3 FOR 9L.DC-9 3 MI AHEAD.WIND 110
678.40	681.40	3.00	1P160041 AT NINE.CLEARED TO LAND RW 9L.
684.00			16BL10 CROSS BANNR
684.00			160011 SET FLAPS TO FLAPS 1
684.00	684.70	0.70	1P160058 CALL OUT -(FLAPS 1)
689.00	689.70	0.70	1P 10 MONITOR CALL-OUT
691.00	691.44	0.44	7F 30 MON ENG NO 2 EPR IND
691.00	691.44	0.44	7F 25 MON ENG NO 1 EPR IND
670.00			160071 FLIGHT INSTRUMENT SCAN -A2, PILOT
670.00	700.00	30.00	2K 14 MON MAP VIDEO
670.00	700.00	30.00	2K 48 MON STRAIGHT TREND VECTOR SYMBOL
670.00	700.00	30.00	2K 33 MON CURVED TREND VECTOR SYMBOLS
670.00	700.00	30.00	2J 13 MON ILS BOX INDIC
670.00	700.00	30.00	2J 04 MON FLT PATH ACCEL INDIC
670.00	700.00	30.00	2J 01 MON ROLL ATT INDIC
670.00	700.00	30.00	2J 19 MON PITCH REF INDIC
670.00	700.00	30.00	3A 10 MONITOR AIRSPEED INDIC
685.00			16BL11 REACH 190 KCAS
694.00			160017 SET FLAPS TO FLAPS 5
694.00	694.70	0.70	1P160061 CALL OUT -(FLAPS 5)
694.00			160019 FLAP SET PROCEDURE
700.03	700.73	0.70	1P 10 MONITOR CALL-OUT
701.00	701.44	0.44	7F 25 MON ENG NO 1 EPR IND
701.44	701.88	0.44	7F 30 MON ENG NO 2 EPR IND

SINCE MISSION START		ACTIVITY	EVENT/PROCEDURE	
BEGINNING	END	TIME	TASK	
699.00			030007	ENGINE INSTRUMENT SCAN
700.00			180071	FLIGHT INSTRUMENT SCAN -A2, PILOT
700.00	730.00	30.00	2K 14	MON MAP VIDEO
700.00	730.00	30.00	2K 46	MON STRAIGHT TREND VECTOR SYMBOL
700.00	730.00	30.00	2K 33	MON CURVED TREND VECTOR SYMBOLS
700.00	730.00	30.00	2J 13	MON ILS BOX INDIC
700.00	730.00	30.00	2J 04	MON FLT PATH ACCEL INDIC
700.00	730.00	30.00	2J 01	MON ROLL ATT INDIC
700.00	730.00	30.00	2J 19	MON PITCH REF INDIC
700.00	730.00	30.00	3A 10	MONITOR AIRSPEED INDIC
705.00			18BL12	REACH 170 KCAS
710.00			180073	FLIGHT INSTRUMENT SCAN -A1, COPILOT
720.00			180073	FLIGHT INSTRUMENT SCAN -A1, COPILOT
730.00			180073	FLIGHT INSTRUMENT SCAN -A1, COPILOT
730.00			00EV21	PILOT EXT VIS SCAN
730.00	735.00	5.00	8A 10	PILOT EXTERNAL VISION SCAN
740.00			180069	SET SPEED BRAKES
740.00	743.28	3.28	4F 02	SET SPEED BRAKE LEVER TO ARM
740.00	740.73	0.73	4F 07	MONITOR SPEED BRAKE LEVER ARMED LT GREEN
744.00			180048	MON ADF/RMI-2
745.00			180071	FLIGHT INSTRUMENT SCAN -A2, PILOT
745.00	775.00	30.00	2K 14	MON MAP VIDEO
745.00	775.00	30.00	2K 46	MON STRAIGHT TREND VECTOR SYMBOL
745.00	775.00	30.00	2K 33	MON CURVED TREND VECTOR SYMBOLS
745.00	775.00	30.00	2J 13	MON ILS BOX INDIC
745.00	775.00	30.00	2J 04	MON FLT PATH ACCEL INDIC
745.00	775.00	30.00	2J 01	MON ROLL ATT INDIC
745.00	775.00	30.00	2J 19	MON PITCH REF INDIC
745.00	775.00	30.00	3A 10	MONITOR AIRSPEED INDIC
745.00			18BL13	CROSS REIFF
748.00			180070	SET AUTO BRAKES
755.00			00EV01	C/P EXT VIS SCAN
765.00			180073	FLIGHT INSTRUMENT SCAN -A1, COPILOT
775.00			180073	FLIGHT INSTRUMENT SCAN -A1, COPILOT
775.00			180071	FLIGHT INSTRUMENT SCAN -A2, PILOT
775.00	805.00	30.00	2K 14	MON MAP VIDEO
775.00	805.00	30.00	2K 46	MON STRAIGHT TREND VECTOR SYMBOL
775.00	805.00	30.00	2K 33	MON CURVED TREND VECTOR SYMBOLS
775.00	805.00	30.00	2J 13	MON ILS BOX INDIC

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SINCE MISSION START BEGINNING	END	ACTIVITY TIME	EVENT/PROCEDURE TASK
775.00	805.00	30.00	2J 04 MON FLT PATH ACCEL INDIC
775.00	805.00	30.00	2J 01 MON ROLL ATT INDIC
775.00	805.00	30.00	2J 19 MON PITCH REF INDIC
775.00	805.00	30.00	3A 10 MONITOR AIRSPEED INDIC
800.00			100055 REPORT RUNWAY IN SIGHT
802.00	803.00	1.00	1P 10 MONITOR CALL-OUT
805.00			00EV21 PILOT EXT VIS SCAN
805.00	810.00	5.00	8A 10 PILOT EXTERNAL VISION SCAN
808.00			100018 FLAP SET PROCEDURE
814.03	814.73	0.70	1P 10 MONITOR CALL-OUT
815.00	815.44	0.44	7F 25 MON ENG NO 1 EPR IND
815.44	815.88	0.44	7F 30 MON ENG NO 2 EPR IND
808.00			100025 SET FLAPS TO FLAPS 15
808.00	808.70	0.70	1P100062 CALL OUT -(FLAPS 15)
812.00			100042 MON ADF/RMI-1
812.00	814.00	2.00	5D 28 MON ADF POINTER NO.1 ON ADF/RMI 1 INDIC
812.00	814.00	2.00	5D 29 MON ADF POINTER NO.2 ON ADF/RMI 1 INDIC
815.00			100059 CROSS RWY 08 OUTER MARKER
815.00	8'5.72	0.72	3V 11 MONITOR OUTER MARKER LT ON AND AUDIBLE SIGNAL
817.00	818.80	1.80	1P100075 CALL OUT -(GEAR DOWN AND LANDING CHECK-LIST)
815.00	817.10	2.10	3H 08 START ELAPSED TIME INDIC
815.00			100L14 CROSS CATTA LOM-GEAR THEN EXTENDED AND 155 KCAS MAINTAINED
815.00			100049 MON RADIO ALTIMETER
820.00			100080 EXTEND LANDING GEAR
820.00			100071 FLIGHT INSTRUMENT SCAN -A2, PILOT
820.00	850.00	30.00	2K 14 MON MAP VIDEO
820.00	850.00	30.00	2K 46 MON STRAIGHT TREND VECTOR SYMBOL
820.00	850.00	30.00	2K 33 MON CURVED TREND VECTOR SYMBOLS
820.00	850.00	30.00	2J 13 MON ILS BOX INDIC
820.00	850.00	30.00	2J 04 MON FLT PATH ACCEL INDIC
820.00	850.00	30.00	2J 01 MON ROLL ATT INDIC
820.00	850.00	30.00	2J 19 MON PITCH REF INDIC
820.00	850.00	30.00	3A 10 MONITOR AIRSPEED INDIC
845.00			100082 LANDING CHECKLIST
847.00	847.60	0.60	1P 10 MONITOR CALL-OUT
847.60	848.00	0.40	1P 14 MONITOR CALL-OUT
850.00	850.70	0.70	1P 10 MONITOR CALL-OUT
851.00	852.30	1.30	1P100079 CALL OUT -(ARMED - GREEN LIGHT)
854.50	855.20	0.70	1P 10 MONITOR CALL-OUT
855.20	856.20	1.00	1P 10 MONITOR CALL-OUT
856.20	856.60	0.40	1P 14 MONITOR CALL-OUT

SINCE MISSION START BEGINNING	END	ACTIVITY TIME	EVENT/PROCEDURE TASK
858.60	859.70	1.10	1P 12 MONITOR CALL-OUT
850.00			00EV21 PILOT EXT VIS SCAN
850.00	855.00	5.00	5A 10 PILOT EXTERNAL VISION SCAN
855.00			180071 FLIGH/ INSTRUMENT SCAN -A2, PILOT
855.00	885.00	30.00	2K 14 MON MAP VIDEO
855.00	885.00	30.00	2K 46 MON STRAIGHT TREND VECTOR SYMBOL
855.00	885.00	30.00	2K 33 MON CURVED TREND VECTOR SYMBOLS
855.00	885.00	30.00	2J 13 MON ILS BOX INDIC
855.00	885.00	30.00	2J 04 MON FLT PATH ACCEL INDIC
855.00	885.00	30.00	2J 01 MON ROLL ATT INDIC
855.00	885.00	30.00	2J 19 MON PITCH REF INDIC
855.00	885.00	30.00	3A 10 MONITOR AIRSPEED INDIC
865.00			00EV02 C/P EXT VIS SCAN
877.00			180073 FLIGHT INSTRUMENT SCAN -A1, COPILOT
889.00			030007 ENGINE INSTRUMENT SCAN
885.00			180071 FLIGHT INSTRUMENT SCAN -A2, PILOT
885.00	915.00	30.00	2K 14 MON MAP VIDEO
885.00	915.00	30.00	2K 46 MON STRAIGHT TREND VECTOR SYMBOL
885.00	915.00	30.00	2K 33 MON CURVED TREND VECTOR SYMBOLS
885.00	915.00	30.00	2J 13 MON ILS BOX INDIC
885.00	915.00	30.00	2J 04 MON FLT PATH ACCEL INDIC
885.00	915.00	30.00	2J 01 MON ROLL ATT INDIC
885.00	915.00	30.00	2J 19 MON PITCH REF INDIC
885.00	915.00	30.00	3A 10 MONITOR AIRSPEED INDIC
895.00			180049 MON RADIO ALTIMETER
900.00			00EV04 C/P EXT VIS SCAN
923.00			180065 DESCEND THRU -DECISION HEIGTH
925.58	926.38	0.80	1P 11 MONITOR CALL-OUT
915.00			00EV21 PILOT EXT VIS SCAN
915.00	920.00	5.00	5A 10 PILOT EXTERNAL VISION SCAN
920.00			180071 FLIGHT INSTRUMENT SCAN -A2, PILOT
920.00	950.00	30.00	2K 14 MON MAP VIDEO
920.00	950.00	30.00	2K 46 MON STRAIGHT TREND VECTOR SYMBOL
920.00	950.00	30.00	2K 33 MON CURVED TREND VECTOR SYMBOLS
920.00	950.00	30.00	2J 13 MON ILS BOX INDIC
920.00	950.00	30.00	2J 04 MON FLT PATH ACCEL INDIC
920.00	950.00	30.00	2J 01 MON ROLL ATT INDIC
920.00	950.00	30.00	2J 19 MON PITCH REF INDIC
920.00	950.00	30.00	3A 10 MONITOR AIRSPEED INDIC

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SINCE MISSION START BEGINNING	END	ACTIVITY TIME	EVENT/PROCEDURE TASK		
925.00			100064		CROSS RWY 08 MIDDLE MARKER
925.00	926.91	1.91	5V	13	MONITOR MIDDLE MARKER ANNUN LT ON AND AUDIBLE SIGNAL
926.00			100L15		CROSS MIDDLE MARKER
930.00			00EV02		C/P EXT VIS SCAN
940.00			100073		FLIGHT INSTRUMENT SCAN -A1, COPILOT
941.00			100L16		CROSS RW THRESHOLD
950.00			100L17		TOUCHDOWN
950.00			100036		TOUCHDOWN AND ROLL-OUT, ABCS AUTO LAND MODE CONTROLS A/C UNTILL 30KTS
950.00	980.00	30.00	8A	11	PILOT EXTERNAL VISION SCAN
950.00	980.00	30.00	2J	15	MON TV VIDEO
950.00	980.00	30.00	2J	40	MON EADI RNWY
950.00	980.00	30.00	2J	41	MON EADI DRIFT INDIC
950.00	980.00	30.00	7F	25	MON ENG NO 1 EPR IND
950.00	980.00	30.00	7F	30	MON ENG NO 2 EPR IND
980.00			100036		TOUCHDOWN AND ROLL-OUT, ABCS AUTO LAND MODE CONTROLS A/C UNTILL 30KTS
980.00	1010.00	30.00	8A	11	PILOT EXTERNAL VISION SCAN
980.00	1010.00	30.00	2J	15	MON TV VIDEO
980.00	1010.00	30.00	2J	40	MON EADI RNWY
980.00	1010.00	30.00	2J	41	MON EADI DRIFT INDIC
980.00	1010.00	30.00	7F	25	MON ENG NO 1 EPR IND
980.00	1010.00	30.00	7F	30	MON ENG NO 2 EPR IND
1010.00			100037		DISENGAGE ABCS
1010.00	1012.13	2.13	2H	10	PRESS LAND MODE SW
1012.13	1013.18	1.05	2H	13	MON LAND MODE LT DARK - LAND MODE DISENGAGED
1013.18	1014.62	1.44	2H	01	PRESS ATT CWS MODE SW
1014.62	1015.67	1.05	2H	03	MON ATT CWS MODE LT GREEN - ATT CWS ENGAGED
1015.67	1017.01	1.34	2H	08	MON AUTO MODE LT DARK - AUTO MODE DISENGAGED
1010.00	1020.00	10.00	4A	04	MANUALLY CONTROL A/C
1020.00	1025.00	5.00	4A	04	MANUALLY CONTROL A/C
1010.00			00EV23		PILOT EXT VIS SCAN
1010.00	1025.00	15.00	8A	10	PILOT EXTERNAL VISION SCAN
984.00			100071		HANDOFF TO GROUND CONTROL -121.9
984.00	990.00	6.00	1B	15	MON VHF-2 COMM AUDIO
984.00	987.50	3.50	1P100087		MON RADIO COMM - [NASA 515,EXIT RUN-WAY NEXT INTERSEC-TION. CONTACT GROUND
987.50	990.00	2.50	1P100088		POINT NINER WHEN CLEAR OF RUNWAY, OVER]
1004.00	1007.50	3.50	1B	15	MON VHF-2 COMM AUDIO
1004.00	1007.50	3.50	1P100091		MON RADIO COMM - [NASA 515, ATLANTA GROUND, TAXI TO RAMP VIA NORTHEAST-SOUTH-
1007.50	1008.50	1.00	1P100092		WEST TAXIWAY, OVER]

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****************                 *****************************************                 NOV10 1986
* UNSHIFTED    *                 *                                       *
****************                 *       MISSION SCENARIO REPORT         *
                                 *                                       *
                                 *  MISSION - MD-3 DATA LINK             *
                                 *            ILS AP-BASE LN.            *
                                 *                                       *
                                 *  CONFIGURATION - 737 ADVCND FLT DCK   *
                                 *                                       *
                                 *  CREWMEMBER - PILOT                   *
                                 *                                       *
                                 *****************************************

                                                                             FLIGHT PHASE
     TIME INTERVAL (SECS)            TOTAL                                      EVENT/PROCEDURE
     SINCE MISSION START             ACTIVITY                                       TASK
     BEGINNING       END             TIME
                                                                             10DL DATA LINK AFD ILS AP
       0.00
                                                                                10DL01    CROSS LOGEN INTERSEC
       0.00                                                                               TION AT 250 KCAS AND
                                                                                          14000 FEET.ATL CENTR
                                                                                          HAS PREVIOUSLY INSTR
                                                                                          UCTED NASA 515 TO
                                                                                          MONITOR ATL APPROACH
                                                                                          ON 128.9 AT LOGEN.
                                                                                          VHF-2R HAS BEEN SET.

       0.00                                                                     10DL90    MONITOR ATL APPROACH
                                                                                          ON 128.9/VHF-2R

       0.00                                                                     100080    DROP OUT OF HOR
                                                                                          AND VERT PATH TO
                                                                                          FPA,TKA,AND CAS
                                                                                          AUTO FLT MODES
                                                                                          ENTER FPA IN MCP

       0.00        0.78                0.78                                          2H    38   MON HOR PATH MODE LT
                                                                                                 DARK - HOR PATH MODE
                                                                                                 DISENGAGED

       0.00        0.78                0.78                                          2H    42   MON VERT PATH MODE
                                                                                                 LT DARK - VERT PATH
                                                                                                 MODE DISENGAGED

       0.80        2.14                1.34                                          2H    08   MON AUTO MODE LT
                                                                                                 GREEN - AUTO MODE
                                                                                                 ENGAGED

       2.10        2.87                0.77                                          2H    15   MON TKA SEL MODE LT
                                                                                                 GREEN - TKA SEL MODE
                                                                                                 ENGAGED

       2.10        2.87                0.77                                          2H    22   MONITOR FPA SEL MODE
                                                                                                 LT GREEN - FPA SEL
                                                                                                 MODE ENGAGED

       2.90        5.35                2.45                                          2H    26   ROTATE FPA SEL KNOB
       2.90        3.67                0.77                                          2H    24   MONITOR FPA SEL MODE
                                                                                                 LT BLUE - FPA SEL
                                                                                                 MODE PRESELECTED

       4.30        5.38                1.08                                          2H    27   READ FPA SEL VALUE
                                                                                                 ON DIGITAL INDIC

       5.40        7.40                2.00                                          2K    32   MON ALT/RNG SYMBOLS
       7.40        8.80                1.40                                          2H    21   PRESS FPA SEL MODE
                                                                                                 SW

       8.80        9.57                0.77                                          2H    23   MONITOR FPA SEL MODE
                                                                                                 LT GREEN - FPA SEL
                                                                                                 MODE ENGAGED

      10.00                                                                     000048    FLIGHT INSTRUMENT
                                                                                          SCAN -A2

      10.00       40.00               30.00                                          2J    02   MON PITCH ATTITUDE
                                                                                                 INDIC

      10.00       40.00               30.00                                          3L    02   MON VERTICAL SPEED
                                                                                                 INDIC

      10.00       40.00               30.00                                          3A    10   MONITOR AIRSPEED
                                                                                                 INDIC

      10.00       40.00               30.00                                          2K    14   MON  MAP VIDEO
      10.00       40.00               30.00                                          2K    40   MON STRAIGHT TREND
                                                                                                 VECTOR SYMBOL

      10.00       40.00               30.00                                          2K    38   MON CURVED TREND
                                                                                                 VECTOR SYMBOLS

      40.00                                                                     000048    FLIGHT INSTRUMENT
                                                                                          SCAN -A2

      40.00       70.00               30.00                                          2J    02   MON PITCH ATTITUDE
                                                                                                 INDIC

      40.00       70.00               30.00                                          3L    02   MON VERTICAL SPEED
                                                                                                 INDIC

      40.00       70.00               30.00                                          3A    10   MONITOR AIRSPEED
                                                                                                 INDIC
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SINCE MISSION START		ACTIVITY TIME	EVENT/PROCEDURE TASK
BEGINNING	END		
40.00	70.00	30.00	2K 14 MON MAP VIDEO
40.00	70.00	30.00	2K 46 MON STRAIGHT TREND VECTOR SYMBOL
40.00	70.00	30.00	2K 33 MON CURVED TREND VECTOR SYMBOLS
70.00			090048 FLIGHT INSTRUMENT SCAN -A2
70.00	100.00	30.00	2J 02 MON PITCH ATTITUDE INDIC
70.00	100.00	30.00	3L 02 MON VERTICAL SPEED INDIC
70.00	100.00	30.00	3A 10 MONITOR AIRSPEED INDIC
70.00	100.00	30.00	2K 14 MON MAP VIDEO
70.00	100.00	30.00	2K 46 MON STRAIGHT TREND VECTOR SYMBOL
70.00	100.00	30.00	2K 33 MON CURVED TREND VECTOR SYMBOLS
15.00			180015 SET NAV-1 TO RUNWAY 8L ILS -109.3
31.50	34.00	2.50	1P 12 MONITOR CALL-OUT
34.00	36.25	2.25	5G 04 MON VOR POINTER NO.1 ON VOR/RMI 1 INDIC
80.00			00EV30 PILOT EXT VIS SCAN
80.00	110.00	30.00	8A 12 PILOT EXTERNAL VISION SCAN
38.00			180039 SET ADF-1 TO CATTA -375KC
45.73	47.23	1.50	1P 02 MONITOR CALL-OUT
49.00			180040 SET ADF-2 TO FLANC -344
54.00	55.50	1.50	1P 02 MONITOR CALL-OUT
58.00			180038 SET DECISION HEIGTH ON RADIO ALTIMETER
64.00			030007 ENGINE INSTRUMENT SCAN
70.00			180005 DESCENT AND APPROACH CHECKLIST - 1
70.00	72.00	2.00	1P180043 CALL OUT-(DESCENT AND APPROACH CHECK-LIST]
85.00	86.00	1.00	1P 10 MONITOR CALL-OUT
87.00	87.80	0.80	1P 07 MONITOR REPORT
90.00	91.80	1.80	1P 13 MONITOR CALL-OUT
98.00	98.40	0.40	1P 18 MONITOR REPORT
100.00			180006 DESCENT AND APPROACH CHECKLIST - 2
102.00	102.80	0.80	1P 11 MONITOR CALL-OUT
103.00	106.54	3.54	7M 03 SET ENG NO.1 START SW TO FLT
106.54	108.28	1.74	7M 06 SET ENG NO.2 START SW TO FLT
108.50	109.00	0.50	1P180049 CALL OUT [FLIGHT]
111.00	112.10	1.10	1P 12 MONITOR CALL-OUT
114.20	114.50	0.30	1P 16 MONITOR REPORT
116.50	117.90	1.40	1P 13 MONITOR CALL-OUT
123.40	124.70	1.30	1P 09 MONITOR REPORT
128.00			180007 DESCENT AND APPROACH CHECKLIST - 3
128.00	129.50	1.50	1P 02 MONITOR CALL-OUT
146.00	147.80	1.80	1P 14 MONITOR CALL-OUT
148.00	150.57	2.57	3A 07 MON V-REF BUG SETTING

SINCE MISSION START BEGINNING	END	ACTIVITY TIME	EVENT/PROCEDURE TASK		
148.00	150.57	2.57	3A	05	SET V-REF BUG
151.00	154.00	3.00	3A	18	CAPT CHECK F.O.<S V-REF BUG SETTING
154.00	155.60	1.60	1P	08	MONITOR REPORT
157.60	158.90	1.30	1P	02	MONITOR CALL-OUT
165.00			030007		ENGINE INSTRUMENT SCAN
180.00			00EV05		C/P EXT VIS SCAN
185.00			000051		FLIGHT INSTRUMENT SCAN -A1
185.00	195.00	10.00	2J	02	MON PITCH ATTITUDE INDIC
185.00	195.00	10.00	3L	03	MON VERTICAL SPEED INDIC
185.00	195.00	10.00	3A	10	MONITOR AIRSPEED INDIC
185.00	195.00	10.00	2K	14	MON MAP VIDEO
185.00	195.00	10.00	2K	46	MON STRAIGHT TREND VECTOR SYMBOL
185.00	195.00	10.00	2K	52	MON CURVED TREND VECTOR SYMBOLS
195.00			160046		MON ADF/RMI-2
198.00			10DL01		HANDOFF TO ATL FINAL APPROACH CONTROLLER VECTOR TO DOWNWIND
195.00	196.60	1.60	1D16XX01		MON INFORMATION MANAGEMENT ATENSON
196.60	198.60	2.00	1D16XX02		MON INFORMATION MANAGEMENT DISPLAY (MODE-S UPLINK PNDG) AMBER
200.40	210.40	10.00	1D16AA01		MONITOR UPLINK CALL-OUT FROM COPILOT
200.00			10DL01		ARM NEW DL MCP ALT
200.00	200.78	0.78	2H	31	MON ALT ENG MODE LT BLUE - ALT ENG MODE PRESELECTED
200.80	201.86	1.06	2H	34	READ ALT ENG VALUE ON DIGITAL INDIC
201.86	203.28	1.42	2H	28	PRESS ALT ENG MODE S SW
203.28	204.06	0.78	2H	30	MON ALT ENG MODE LT ORANGE - ALT ENG MODE ARMED
200.00			10BL02		BEGIN TURN TO DOWN-WIND LEG
205.00			10DL02		ENGAGE DATA LINKED HEADING IN MCP
205.00	205.77	0.77	2H	17	MON TKA SEL MODE LT BLUE - TKA SEL MODE PRESELECTED
205.80	206.91	1.11	2H	20	READ TKA SEL VALUE ON DIGITAL INDIC
206.90	208.31	1.41	2H	14	PRESS TKA SEL MODE SW
208.30	209.07	0.77	2H	18	MON TKA SEL MODE LT GREEN - TKA SEL MODE ENGAGED
210.00			10BL03		DESCEND THRU 11000.
210.00			000051		FLIGHT INSTRUMENT SCAN -A1
210.00	220.00	10.00	2J	02	MON PITCH ATTITUDE INDIC
210.00	220.00	10.00	3L	02	MON VERTICAL SPEED INDIC
210.00	220.00	10.00	3A	10	MONITOR AIRSPEED INDIC
210.00	220.00	10.00	2K	14	MON MAP VIDEO

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SINCE MISSION START BEGINNING	END	ACTIVITY TIME	EVENT/PROCEDURE TASK		
210.00	220.00	10.00	2K	46	MON STRAIGHT TREND VECTOR SYMBOL
210.00	220.00	10.00	2K	33	MON CURVED TREND VECTOR SYMBOLS
219.00			160002	TUNE ATL APPROACH ON 127.25	
226.00			16DL03	MONITOR ATL APPROACH ON 127.25/VHF-3L	
220.00			090040	FLIGHT INSTRUMENT SCAN -A2	
220.00	250.00	30.00	2J	02	MON PITCH ATTITUDE INDIC
220.00	250.00	30.00	3L	02	MON VERTICAL SPEED INDIC
220.00	250.00	30.00	3A	10	MONITOR AIRSPEED INDIC
220.00	250.00	30.00	2K	14	MON MAP VIDEO
220.00	250.00	30.00	2K	46	MON STRAIGHT TREND VECTOR SYMBOL
220.00	250.00	30.00	2K	33	MON CURVED TREND VECTOR SYMBOLS
240.00			00EV00	C/P EXT VIS SCAN	
250.00			090040	FLIGHT INSTRUMENT SCAN -A2	
250.00	280.00	30.00	2J	02	MON PITCH ATTITUDE INDIC
250.00	280.00	30.00	3L	02	MON VERTICAL SPEED INDIC
250.00	280.00	30.00	3A	10	MONITOR AIRSPEED INDIC
250.00	280.00	30.00	2K	14	MON MAP VIDEO
250.00	280.00	30.00	2K	46	MON STRAIGHT TREND VECTOR SYMBOL
250.00	280.00	30.00	2K	33	MON CURVED TREND VECTOR SYMBOLS
280.00			090040	FLIGHT INSTRUMENT SCAN -A2	
280.00	310.00	30.00	2J	02	MON PITCH ATTITUDE INDIC
280.00	310.00	30.00	3L	02	MON VERTICAL SPEED INDIC
280.00	310.00	30.00	3A	10	MONITOR AIRSPEED INDIC
280.00	310.00	30.00	2K	14	MON MAP VIDEO
280.00	310.00	30.00	2K	46	MON STRAIGHT TREND VECTOR SYMBOL
280.00	310.00	30.00	2K	33	MON CURVED TREND VECTOR SYMBOLS
310.00			090040	FLIGHT INSTRUMENT SCAN -A2	
310.00	340.00	30.00	2J	02	MON PITCH ATTITUDE INDIC
310.00	340.00	30.00	3L	02	MON VERTICAL SPEED INDIC
310.00	340.00	30.00	3A	10	MONITOR AIRSPEED INDIC
310.00	340.00	30.00	2K	14	MON MAP VIDEO
310.00	340.00	30.00	2K	46	MON STRAIGHT TREND VECTOR SYMBOL
310.00	340.00	30.00	2K	33	MON CURVED TREND VECTOR SYMBOLS
340.00			090040	FLIGHT INSTRUMENT SCAN -A2	
340.00	370.00	30.00	2J	02	MON PITCH ATTITUDE INDIC
340.00	370.00	30.00	3L	02	MON VERTICAL SPEED INDIC

SINCE MISSION START		ACTIVITY TIME	EVENT/PROCEDURE	TASK	
BEGINNING	END				
340.00	370.00	30.00	3A	10	MONITOR AIRSPEED INDIC
340.00	370.00	30.00	2K	14	MON MAP VIDEO
340.00	370.00	30.00	2K	46	MON STRAIGHT TREND VECTOR SYMBOL
340.00	370.00	30.00	2K	33	MON CURVED TREND VECTOR SYMBOLS
288.00			030007		ENGINE INSTRUMENT SCAN
285.00			00EV09		C/P EXT VIS SCAN
340.00			00EV04		C/P EXT VIS SCAN
363.00			030007		ENGINE INSTRUMENT SCAN
370.00			10DL04		DESCEND THRU 8000.
370.00			10DL04		ALTITUDE STEP DOWN
370.00	371.60	1.60	1D10XX01		MON INFORMATION MANAGEMENT ATENSON
371.60	373.60	2.00	1D10XX02		MON INFORMATION MANAGEMENT DISPLAY (MODE-S UPLINK PROG) AMBER
375.40	379.40	4.00	1D10AA04		MONITOR UPLINK CALL-OUT FROM COPILOT
375.00			10DL01		ARM NEW DL MCP ALT
375.00	375.78	0.78	2H	31	MON ALT ENG MODE LT BLUE - ALT ENG MODE PRESELECTED
375.80	376.86	1.08	2H	34	READ ALT ENG VALUE ON DIGITAL INDIC
376.86	378.28	1.42	2H	28	PRESS ALT ENG MODE S SW
378.28	379.06	0.78	2H	30	MON ALT ENG MODE LT ORANGE - ALT ENG MODE ARMED
385.00			090048		FLIGHT INSTRUMENT SCAN -A2
385.00	415.00	30.00	2J	02	MON PITCH ATTITUDE INDIC
385.00	415.00	30.00	3L	02	MON VERTICAL SPEED INDIC
385.00	415.00	30.00	3A	10	MONITOR AIRSPEED INDIC
385.00	415.00	30.00	2K	14	MON MAP VIDEO
385.00	415.00	30.00	2K	46	MON STRAIGHT TREND VECTOR SYMBOL
385.00	415.00	30.00	2K	33	MON CURVED TREND VECTOR SYMBOLS
415.00			090048		FLIGHT INSTRUMENT SCAN -A2
415.00	445.00	30.00	2J	02	MON PITCH ATTITUDE INDIC
415.00	445.00	30.00	3L	02	MON VERTICAL SPEED INDIC
415.00	445.00	30.00	3A	10	MONITOR AIRSPEED INDIC
415.00	445.00	30.00	2K	14	MON MAP VIDEO
415.00	445.00	30.00	2K	46	MON STRAIGHT TREND VECTOR SYMBOL
415.00	445.00	30.00	2K	33	MON CURVED TREND VECTOR SYMBOLS
445.00			090048		FLIGHT INSTRUMENT SCAN -A2
445.00	475.00	30.00	2J	02	MON PITCH ATTITUDE INDIC
445.00	475.00	30.00	3L	02	MON VERTICAL SPEED INDIC

SINCE MISSION START BEGINNING	END	ACTIVITY TIME	EVENT/PROCEDURE TASK		
445.00	475.00	30.00	3A	10	MONITOR AIRSPEED INDIC
445.00	475.00	30.00	2K	14	MON MAP VIDEO
445.00	475.00	30.00	2K	46	MON STRAIGHT TREND VECTOR SYMBOL
445.00	475.00	30.00	2K	33	MON CURVED TREND VECTOR SYMBOLS
475.00			000048		FLIGHT INSTRUMENT SCAN -A2
475.00	505.00	30.00	2J	02	MON PITCH ATTITUDE INDIC
475.00	505.00	30.00	3L	02	MON VERTICAL SPEED INDIC
475.00	505.00	30.00	3A	10	MONITOR AIRSPEED INDIC
475.00	505.00	30.00	2K	14	MON MAP VIDEO
475.00	505.00	30.00	2K	46	MON STRAIGHT TREND VECTOR SYMBOL
475.00	505.00	30.00	2K	33	MON CURVED TREND VECTOR SYMBOLS
505.00			000051		FLIGHT INSTRUMENT SCAN -A1
505.00	515.00	10.00	2J	02	MON PITCH ATTITUDE INDIC
505.00	515.00	10.00	3L	02	MON VERTICAL SPEED INDIC
505.00	515.00	10.00	3A	10	MONITOR AIRSPEED INDIC
505.00	515.00	10.00	2A	14	MON MAP VIDEO
505.00	515.00	10.00	2K	46	MON STRAIGHT TREND VECTOR SYMBOL
505.00	515.00	10.00	2K	33	MON CURVED TREND VECTOR SYMBOLS
385.00			00EV06		C/P EXT VIS SCAN
430.00			030007		ENGINE INSTRUMENT SCAN
450.00			10DL02		RECEIVE ATL ETIS TERMINAL INFORMATION
459.20	460.20	1.00	1D10XX01		MON INFORMATION MANAGEMENT ATENSON
460.20	462.20	2.00	1D10XX06		MON VISUAL ALERT DSP [MODE-S UPLINK PNDG] INDENTED BLUE
480.00			10DL05		CROSS FT NDB
480.00			160003		SET ALTIMETER BARO SETTING TO 29.84
480.00	483.50	3.50	1P	13	MONITOR CALL-OUT
484.00			140032		ALTIMETER BARO SET PROC.
484.00	486.85	2.85	3H	04	MONITOR ALTIMETER BARO SETTING INDIC
484.00	486.85	2.85	3H	03	SET ALTIMETER BARO SETTING CONTROL
513.00			030007		ENGINE INSTRUMENT SCAN
519.00			160041		MON VOR/RMI-1
519.00	521.00	2.00	5G	04	MON VOR POINTER NO.1 ON VOR/RMI 1 INDIC
519.00	521.00	2.00	5G	05	MON VOR POINTER NO.2 ON VOR/RMI 1 INDIC
520.00			10DL06		VECTOR FOR BASE LEG
520.00	521.60	1.60	1D10XX01		MON INFORMATION MANAGEMENT ATENSON
521.60	523.60	2.00	1D10XX02		MON INFORMATION MANAGEMENT DISPLAY [MODE-S UPLINK PNDG] AMBER

SINCE MISSION START BEGINNING	END	ACTIVITY TIME	EVENT/PROCEDURE TASK
525.40	528.40	3.00	1D16AA05 MONITOR UPLINK CALL-OUT FROM COPILOT
523.00			16DL02 ENGAGE DATA LINKED HEADING IN MCP
523.00	523.77	0.77	2H 17 MON TKA SEL MODE LT BLUE - TKA SEL MODE PRESELECTED
523.80	524.91	1.11	2H 20 READ TKA SEL VALUE ON DIGITAL INDIC
524.90	526.31	1.41	2H 14 PRESS TKA SEL MODE SW
526.30	527.07	0.77	2H 15 MON TKA SEL MODE LT GREEN - TKA SEL MODE ENGAGED
523.00			16BL06 BEGIN TURN TO BASE
540.00			140023 REPORT 1000 FT TO LEVEL OFF
542.00	543.70	1.70	1P 11 MONITOR CALL-OUT
550.00			90EV03 C/P EXT VIS SCAN
555.00			880051 FLIGHT INSTRUMENT SCAN -A1
555.00	565.00	10.00	3J 02 MON PITCH ATTITUDE INDIC
555.00	565.00	10.00	3L 02 MON VERTICAL SPEED INDIC
555.00	565.00	10.00	3A 10 MONITOR AIRSPEED INDIC
555.00	565.00	10.00	2K 14 MON MAP VIDEO
555.30	565.00	10.00	2K 46 MON STRAIGHT TREND VECTOR SYMBOL
555.00	565.00	10.00	2K 33 MON CURVED TREND VECTOR SYMBOLS
565.00			160041 MON VOR/RMI-1
565.00	567.00	2.00	5G 04 MON VOR POINTER NO.1 ON VOR/RMI 1 INDIC
565.00	567.00	2.00	5G 05 MON VOR POINTER NO.2 ON VOR/RMI 1 INDIC
569.00			160042 MON ADF/RMI-1
569.00	571.00	2.00	5D 28 MON ADF POINTER NO.1 ON ADF/RMI 1 INDIC
569.00	571.00	2.00	5D 29 MON ADF POINTER NO.2 ON ADF/RMI 1 INDIC
570.00			16DL06 VECTOR TO FINAL APPR
570.00	571.60	1.60	1D16XX01 MON INFORMATION MANAGEMENT ATENSON
571.60	573.60	2.00	1D16XX02 MON INFORMATION MANAGEMENT DISPLAY (MODE-S UPLINK PNDG) AMBER
575.40	584.40	9.00	1D16AA06 MONITOR UPLINK CALL-OUT FROM COPILOT
584.40	591.40	7.00	1D16AA07 MONITOR UPLINK CALL-OUT FROM COPILOT
575.00			16DL02 ENGAGE DATA LINKED HEADING IN MCP
575.00	575.77	0.77	2H 17 MON TKA SEL MODE LT BLUE - TKA SEL MODE PRESELECTED
575.80	576.91	1.11	2H 20 READ TKA SEL VALUE ON DIGITAL INDIC
576.90	578.31	1.41	2H 14 PRESS TKA SEL MODE SW
578.30	579.07	0.77	2H 15 MON TKA SEL MODE LT GREEN - TKA SEL MODE ENGAGED
575.00			16BL07 TURN TO INTERCEPT FINAL APPR. COURSE
585.00			160063 ARM LAND MODE

SINCE MISSION START		ACTIVITY	EVENT/PROCEDURE		
BEGINNING	END	TIME	TASK		
595.00	597.13	2.13	2H	10	PRESS LAND MODE SW
597.20	598.25	1.05	2H	12	MON LAND MODE LT ORANGE - LAND MODE ARMED
597.00			180024		TUNE ATLANTA TOWER -119.5
600.00			180070		FLIGHT INSTRUMENT SCAN -A1, PILOT
600.00	610.00	10.00	2K	14	MON MAP VIDEO
600.00	610.00	10.00	2K	46	MON STRAIGHT TREND VECTOR SYMBOL
600.00	610.00	10.00	2K	33	MON CURVED TREND VECTOR SYMBOLS
600.00	610.00	10.00	2J	05	MON FLT PATH ANGLE INDIC
600.00	610.00	10.00	2J	04	MON FLT PATH ACCEL INDIC
600.00	610.00	10.00	2J	01	MON ROLL ATT INDIC
600.00	610.00	10.00	2J	19	MON PITCH REF INDIC
600.00	610.00	10.00	3A	10	MONITOR AIRSPEED INDIC
607.00			180073		FLIGHT INSTRUMENT SCAN -A1, COPILOT
610.00			180084		CAPTURE AN ALT IN ALT SEL MODE
610.00	610.78	0.78	2H	29	MONITOR ALT ENG MODE LT GREEN - ALT ENG MODE ENGAGED
611.00	611.77	0.77	2H	25	MONITOR FPA SEL MODE LT DARK - FPA SEL MODE DISENGAGED
610.00			188L08		LEVEL OFF AT 5000 FT BEGIN DECEL FROM 250 TO 210 KCAS
617.00			180073		FLIGHT INSTRUMENT SCAN -A1, COPILOT
613.00			180085		ENTER NEW SPEED IN CAS WINDOW
613.00	615.46	2.46	2H	47	ROTATE CAS ENG KNOB
613.00	614.04	1.04	2H	48	READ CAS ENG VALUE ON DIGITAL INDIC
615.50	616.28	0.78	2H	44	MON CAS ENG MODE LT GREEN - CAS MODE ENGAGED
623.00			180086		CAPTURE LOCALIZER
623.00	625.19	2.19	2J	13	MON ILS BOX INDIC
625.00	626.50	1.50	1P	02	MONITOR CALL-OUT
625.00	625.77	0.77	2H	18	MON TKA SEL MODE LT DARK - TKA SEL MODE DISENGAGED
626.00			180071		FLIGHT INSTRUMENT SCAN -A2, PILOT
626.00	656.00	30.00	2K	14	MON MAP VIDEO
626.00	656.00	30.00	2K	46	MON STRAIGHT TREND VECTOR SYMBOL
626.00	656.00	30.00	2K	33	MON CURVED TREND VECTOR SYMBOLS
626.00	656.00	30.00	2J	13	MON ILS BOX INDIC
626.00	656.00	30.00	2J	04	MON FLT PATH ACCEL INDIC
626.00	656.00	30.00	2J	01	MON ROLL ATT INDIC
626.00	656.00	30.00	2J	19	MON PITCH REF INDIC
626.00	656.00	30.00	3A	10	MONITOR AIRSPEED INDIC
627.00			180073		FLIGHT INSTRUMENT SCAN -A1, COPILOT

SINCE MISSION START		ACTIVITY	EVENT/PROCEDURE		
BEGINNING	END	TIME	TASK		
637.00			160073		FLIGHT INSTRUMENT SCAN -A1, COPILOT
643.00			160046		ANNUNCIATOR RECALL
647.00			160073		FLIGHT INSTRUMENT SCAN -A1, COPILOT
655.00			160041		MON VOR/RMI-1
655.00	657.00	2.00	5G	04	MON VOR POINTER NO.1 ON VOR/RMI 1 INDIC
655.00	657.00	2.00	5G	05	MON VOR POINTER NO.2 ON VOR/RMI 1 INDIC
657.00			160042		MON ADF/RMI-1
657.00	659.00	2.00	5D	28	MON ADF POINTER NO.1 ON ADF/RMI 1 INDIC
657.00	659.00	2.00	5D	29	MON ADF POINTER NO.2 ON ADF/RMI 1 INDIC
657.00			160048		MON ADF/RMI-2
660.00			16BL09		REACH 210 KCAS
660.00			160087		CAPTURE GLIDE SLOPE
660.00	662.19	2.19	2J	13	MON ILS BOX INDIC
662.00	663.05	1.05	2H	11	MON LAND MODE LT GREEN - LAND MODE ENGAGED
664.00			16DL60		MONITOR ATL TOWER ON 119.5/VHF-2R
670.00			16DL61		LANDING CLEARANCE
670.00	671.60	1.60	1D16XX01		MON INFORMATION MANAGEMENT ATENSON
671.60	673.60	2.00	1D16XX02		MON INFORMATION MANAGEMENT DISPLAY [MODE-S UPLINK PNDG] AMBER
675.40	685.40	10.00	1D16AA40		MONITOR UPLINK CALL-OUT FROM COPILOT
684.00			16BL10		CROSS BAHRR
684.00			160011		SET FLAPS TO FLAPS 1
684.00	684.70	0.70	1P160059		CALL OUT -[FLAPS 1]
689.00	689.70	0.70	1P	10	MONITOR CALL-OUT
691.00	691.44	0.44	7F	30	MON ENG NO 2 EPR IND
691.00	691.44	0.44	7F	25	MON ENG NO 1 EPR IND
670.00			160071		FLIGHT INSTRUMENT SCAN -A2, PILOT
670.00	700.00	30.00	2K	14	MON MAP VIDEO
670.00	700.00	30.00	2K	46	MON STRAIGHT TREND VECTOR SYMBOL
670.00	700.00	30.00	2K	33	MON CURVED TREND VECTOR SYMBOLS
670.00	700.00	30.00	2J	13	MON ILS BOX INDIC
670.00	700.00	30.00	2J	04	MON FLT PATH ACCEL INDIC
670.00	700.00	30.00	2J	01	MON ROLL ATT INDIC
670.00	700.00	30.00	2J	19	MON PITCH REF INDIC
670.00	700.00	30.00	3A	10	MONITOR AIRSPEED INDIC
693.00			16BL11		REACH 190 KCAS
694.00			160017		SET FLAPS TO FLAPS 5
694.00	694.70	0.70	1P160061		CALL OUT -[FLAPS 5]
694.00			160019		FLAP SET PROCEDURE
700.03	700.73	0.70	1P	10	MONITOR CALL-OUT
701.00	701.44	0.44	7F	25	MON ENG NO 1 EPR IND
701.44	701.88	0.44	7F	30	MON ENG NO 2 EPR IND

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OF POOR QUALITY

SINCE MISSION START		ACTIVITY TIME	EVENT/PROCEDURE TASK		
BEGINNING	END				
699.00			030007		ENGINE INSTRUMENT SCAN
700.00			180071		FLIGHT INSTRUMENT SCAN -A2, PILOT
700.00	730.00	30.00	2K	14	MON MAP VIDEO
700.00	730.00	30.00	2K	46	MON STRAIGHT TREND VECTOR SYMBOL
700.00	730.00	30.00	2K	33	MON CURVED TREND VECTOR SYMBOLS
700.00	730.00	30.00	2J	13	MON ILS BOX INDIC
700.00	730.00	30.00	2J	04	MON FLT PATH ACCEL INDIC
700.00	730.00	30.00	2J	01	MON ROLL ATT INDIC
700.00	730.00	30.00	2J	19	MON PITCH REF INDIC
700.00	730.00	30.00	3A	10	MONITOR AIRSPEED INDIC
708.00			16BL12		REACH 170 KCAS
710.00			180073		FLIGHT INSTRUMENT SCAN -A1, COPILOT
720.00			180073		FLIGHT INSTRUMENT SCAN -A1, COPILOT
730.00			180073		FLIGHT INSTRUMENT SCAN -A1, COPILOT
730.00			00EV21		PILOT EXT VIS SCAN
730.00	735.00	5.00	8A	10	PILOT EXTERNAL VISION SCAN
740.00			180069		SET SPEED BRAKES
740.00	743.28	3.28	4F	02	SET SPEED BRAKE LEVER TO ARM
740.00	740.73	0.73	4F	07	MONITOR SPEED BRAKE LEVER ARMED LT GREEN
744.00			180048		MON ADF/RMI-2
745.00			180071		FLIGHT INSTRUMENT SCAN -A2, PILOT
745.00	775.00	30.00	2K	14	MON MAP VIDEO
745.00	775.00	30.00	2K	46	MON STRAIGHT TREND VECTOR SYMBOL
745.00	775.00	30.00	2K	33	MON CURVED TREND VECTOR SYMBOLS
745.00	775.00	30.00	2J	13	MON ILS BOX INDIC
745.00	775.00	30.00	2J	04	MON FLT PATH ACCEL INDIC
745.00	775.00	30.00	2J	01	MON ROLL ATT INDIC
745.00	775.00	30.00	2J	19	MON PITCH REF INDIC
745.00	775.00	30.00	3A	10	MONITOR AIRSPEED INDIC
745.00			16BL13		CROSS REIFF
748.00			180070		SET AUTO BRAKES
755.00			00EV01		C/P EXT VIS SCAN
765.00			180073		FLIGHT INSTRUMENT SCAN -A1, COPILOT
775.00			180073		FLIGHT INSTRUMENT SCAN -A1, COPILOT
775.00			180071		FLIGHT INSTRUMENT SCAN -A2, PILOT
775.00	805.00	30.00	2K	14	MON MAP VIDEO
775.00	805.00	30.00	2K	46	MON STRAIGHT TREND VECTOR SYMBOL
775.00	805.00	30.00	2K	33	MON CURVED TREND VECTOR SYMBOLS
775.00	805.00	30.00	2J	13	MON ILS BOX INDIC

SINCE MISSION START BEGINNING	END	ACTIVITY TIME	EVENT/PROCEDURE TASK
775.00	805.00	30.00	2J 04 MON FLT PATH ACCEL INDIC
775.00	805.00	30.00	2J 01 MON ROLL ATT INDIC
775.00	805.00	30.00	2J 19 MON PITCH REF INDIC
775.00	805.00	30.00	3A 10 MONITOR AIRSPEED INDIC
800.00			160058 REPORT RUNWAY IN SIGHT
802.00	803.00	1.00	1P 10 MONITOR CALL-OUT
805.00			00EV21 PILOT EXT VIS SCAN
805.00	810.00	5.00	8A 16 PILOT EXTERNAL VISION SCAN
808.00			160018 FLAP SET PROCEDURE
814.03	814.73	0.70	1P 10 MONITOR CALL-OUT
815.00	815.44	0.44	7F 25 MON ENG NO 1 EPR IND
815.44	815.88	0.44	7F 30 MON ENG NO 2 EPR IND
808.00			160025 SET FLAPS TO FLAPS 15
808.00	808.70	0.70	1P160062 CALL OUT -[FLAPS 15]
812.00			160042 MON ADF/RMI-1
812.00	814.00	2.00	5D 28 MON ADF POINTER NO.1 ON ADF/RMI 1 INDIC
812.00	814.00	2.00	5D 29 MON ADF POINTER NO.2 ON ADF/RMI 1 INDIC
815.00			160059 CROSS OUT OF OUTER MARKER
815.00	815.72	0.72	3V 11 MONITOR OUTER MARKER LT ON AND AUDIBLE SIGNAL
817.00	818.80	1.80	1P160075 CALL OUT -[GEAR DOWN AND LANDING CHECK-LIST]
815.00	817.10	2.10	3N 03 START ELAPSED TIME INDIC
815.00			16BL14 CROSS CATTA LOM-GEAR THEN EXTENDED AND 155 KCAS MAINTAINED
815.00			160049 MON RADIO ALTIMETER
820.00			160080 EXTEND LANDING GEAR
820.00			160071 FLIGHT INSTRUMENT SCAN -A2, PILOT
820.00	850.00	30.00	2K 14 MON MAP VIDEO
820.00	850.00	30.00	2K 46 MON STRAIGHT TREND VECTOR SYMBOL
820.00	850.00	30.00	2K 33 MON CURVED TREND VECTOR SYMBOLS
820.00	850.00	30.00	2J 13 MON ILS BOX INDIC
820.00	850.00	30.00	2J 04 MON FLT PATH ACCEL INDIC
820.00	850.00	30.00	2J 01 MON ROLL ATT INDIC
820.00	850.00	30.00	2J 19 MON PITCH REF INDIC
820.00	850.00	30.00	3A 10 MONITOR AIRSPEED INDIC
845.00			160082 LANDING CHECKLIST
847.00	847.60	0.60	1P 10 MONITOR CALL-OUT
847.60	848.00	0.40	1P 14 MONITOR CALL-OUT
850.00	850.70	0.70	1P 10 MONITOR CALL-OUT
851.00	852.30	1.30	1P160079 CALL OUT -[ARMED - GREEN LIGHT]
854.50	855.20	0.70	1P 10 MONITOR CALL-OUT
855.20	856.20	1.00	1P 10 MONITOR CALL-OUT
856.20	856.60	0.40	1P 14 MONITOR CALL-OUT

SINCE MISSION START		ACTIVITY	EVENT/PROCEDURE		
BEGINNING	END	TIME	TASK		
858.60	859.70	1.10	1P	12	MONITOR CALL-OUT
850.00			00EV21		PILOT EXT VIS SCAN
850.00	855.00	5.00	5A	10	PILOT EXTERNAL VISION SCAN
855.00			100071		FLIGHT INSTRUMENT SCAN -A2, PILOT
855.00	885.00	30.00	2K	14	MON MAP VIDEO
855.00	885.00	30.00	2K	46	MON STRAIGHT TREND VECTOR SYMBOL
855.00	885.00	30.00	2K	33	MON CURVED TREND VECTOR SYMBOLS
855.00	885.00	30.00	2J	13	MON ILS BOX INDIC
855.00	885.00	30.00	2J	04	MON FLT PATH ACCEL INDIC
855.00	885.00	30.00	2J	01	MON ROLL ATT INDIC
855.00	885.00	30.00	2J	19	MON PITCH REF INDIC
855.00	885.00	30.00	3A	10	MONITOR AIRSPEED INDIC
865.00			00EV02		C/P EXT VIS SCAN
877.00			100073		FLIGHT INSTRUMENT SCAN -A1, COPILOT
889.00			030007		ENGINE INSTRUMENT SCAN
885.00			100071		FLIGHT INSTRUMENT SCAN -A2, PILOT
885.00	915.00	30.00	2K	14	MON MAP VIDEO
885.00	915.00	30.00	2K	46	MON STRAIGHT TREND VECTOR SYMBOL
885.00	915.00	30.00	2K	33	MON CURVED TREND VECTOR SYMBOLS
885.00	915.00	30.00	2J	13	MON ILS BOX INDIC
885.00	915.00	30.00	2J	04	MON FLT PATH ACCEL INDIC
885.00	915.00	30.00	2J	01	MON ROLL ATT INDIC
885.00	915.00	30.00	2J	19	MON PITCH REF INDIC
885.00	915.00	30.00	3A	10	MONITOR AIRSPEED INDIC
885.00			100049		MON RADIO ALTIMETER
900.00			00EV04		C/P EXT VIS SCAN
923.00			100086		DESCEND THRU -DECISION HEIGTH
925.50	926.30	0.80	1P	11	MONITOR CALL-OUT
915.00			00EV21		PILOT EXT VIS SCAN
915.00	920.00	5.00	5A	10	PILOT EXTERNAL VISION SCAN
920.00			100071		FLIGHT INSTRUMENT SCAN -A2, PILOT
920.00	950.00	30.00	2K	14	MON MAP VIDEO
920.00	950.00	30.00	2K	46	MON STRAIGHT TREND VECTOR SYMBOL
920.00	950.00	30.00	2K	33	MON CURVED TREND VECTOR SYMBOLS
920.00	950.00	30.00	2J	13	MON ILS BOX INDIC
920.00	950.00	30.00	2J	04	MON FLT PATH ACCEL INDIC
920.00	950.00	30.00	2J	01	MON ROLL ATT INDIC
920.00	950.00	30.00	2J	19	MON PITCH REF INDIC
920.00	950.00	30.00	3A	10	MONITOR AIRSPEED INDIC

SINCE MISSION START BEGINNING	END	ACTIVITY TIME	EVENT/PROCEDURE TASK	
925.00			100084	CROSS RWY 08 MIDDLE MARKER
925.00	926.81	1.81	3V 13	MONITOR MIDDLE MARKER ANNUN LT ON AND AUDIBLE SIGNAL
926.00			10BL15	CROSS MIDDLE MARKER
930.00			00EV02	C/P EXT VIS SCAN
940.00			100073	FLIGHT INSTRUMENT SCAN -A1, COPILOT
941.00			10BL16	CROSS RW THRESHOLD
950.00			10BL17	TOUCHDOWN
950.00			100036	TOUCHDOWN AND ROLL-OUT, AGCS AUTO LAND MODE CONTROLS A/C UNTILL 30KTS
950.00	980.00	30.00	8A 11	PILOT EXTERNAL VISION SCAN
950.00	980.00	30.00	2J 16	MON TV VIDEO
950.00	980.00	30.00	2J 40	MON EADI RNWY
950.00	980.00	30.00	2J 41	MON EADI DRIFT INDIC
950.00	980.00	30.00	7F 25	MON ENG NO 1 EPR IND
950.00	980.00	30.00	7F 30	MON ENG NO 2 EPR IND
980.00			100036	TOUCHDOWN AND ROLL-OUT, AGCS AUTO LAND MODE CONTROLS A/C UNTILL 30KTS
980.00	1010.00	30.00	8A 11	PILOT EXTERNAL VISION SCAN
980.00	1010.00	30.00	2J 16	MON TV VIDEO
980.00	1010.00	30.00	2J 40	MON EADI RNWY
980.00	1010.00	30.00	2J 41	MON EADI DRIFT INDIC
980.00	1010.00	30.00	7F 25	MON ENG NO 1 EPR IND
980.00	1010.00	30.00	7F 30	MON ENG NO 2 EPR IND
1010.00			100037	DISENGAGE AGCS
1010.00	1012.13	2.13	2H 10	PRESS LAND MODE SW
1012.13	1013.18	1.05	2H 13	MON LAND MODE LT DARK - LAND MODE DISENGAGED
1013.18	1014.62	1.44	2H 01	PRESS ATT CWS MODE SW
1014.62	1015.67	1.05	2H 02	MON ATT CWS MODE LT GREEN - ATT CWS ENGAGED
1015.67	1017.01	1.34	2H 09	MON AUTO MODE LT DARK - AUTO MODE DISENGAGED
1010.00	1020.00	10.00	4A 04	MANUALLY CONTROL A/C
1020.00	1025.00	5.00	4A 04	MANUALLY CONTROL A/C
1010.00			00EV23	PILOT EXT VIS SCAN
1010.00	1025.00	15.00	8A 10	PILOT EXTERNAL VISION SCAN
984.00			10DL71	HANDOFF TO GROUND
984.00	985.60	1.60	1D18XX01	MON INFORMATION MANAGEMENT ATENSON
985.60	987.60	2.00	1D18XX02	MON INFORMATION MANAGEMENT DISPLAY [MODE-S UPLINK FNDG] AMBER
989.40	997.40	8.00	1D18AA07	MONITOR UPLINK CALL-OUT FROM COPILOT
1000.00			10DL72	TUNE AND MONITOR ATL GRND ON 121.9/VHF-2L
1009.00			10DL73	TAXI CLEARANCE FROM

SINCE MISSION START		ACTIVITY	EVENT/PROCEDURE	
BEGINNING	END	TIME	TASK	
1009.60	1010.60	1.00	1D16XX01	MON INFORMATION MANAGEMENT ATENSON
1010.60	1012.60	2.00	1D16XX02	MON INFORMATION MANAGEMENT DISPLAY (MODE-S UPLINK PROG) AMBER
1014.40	1019.40	5.00	1D16AA08	MONITOR UPLINK CALL-OUT FROM COPILOT

B.4 NORMAL ILS APPROACH–ADVANCED FLIGHT DECK

Nonflying Pilot

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################                ############################################                  NOV10 1986
# UNSHIFTED    #                #                                          #
################                #          MISSION SCE'ARIO REPORT         #
                                #                                          #
                                #  MISSION - CURRENT NAS                   #
                                #            ILS AP-BASE LN.               #
                                #                                          #
                                #  CONFIGURATION - 737 ADVCND FLT DCK      #
                                #                                          #
                                #  CREWMEMBER - COPILOT                    #
                                #                                          #
                                ############################################

      TIME INTERVAL (SECS)         TOTAL                                    FLIGHT PHASE
      SINCE MISSION START          ACTIVITY                                     EVENT/PROCEDURE
      BEGINNING      END           TIME                                             TASK

        0.00                                                                18BL BASELINE AFD ILS APP

        0.00                                                                    18BL01    CROSS LOGEN INTERSEC
                                                                                          TION AT 250 KCAS AND
                                                                                          14000 FEET.ATL CENTR
                                                                                          HAS PREVIOUSLY INSTR
                                                                                          UCTED NASA 515 TO
                                                                                          CONTACT ATL APPR AT
                                                                                          LOGEN.VHF-2R HAS AL-
                                                                                          READY BEEN TUNED TO
                                                                                          CORRECT FREQ-126.9.

        0.00                                                                    180080    CONTACT ATL APPROACH
                                                                                          ON 126.9

        0.00          1.45           1.45                                           1S   06  SET VHF-2 COMM TFR
                                                                                             SW TO RIGHT

        2.40          9.40           7.00                                           1A   25  ACTUATE COMM 2 PUSH-
                                                                                             TO-TALK SW

        2.40          9.40           7.00                                           1P16XX90  ATL APP,NASA 515 DES
                                                                                             CENDING TO 11000 FT
                                                                                             WITH INFO LIMA.

        9.40         13.40           4.00                                           1P16YY90  NASA 515,ATL APPR,
                                                                                             ROGER.

        0.00                                                                    180080    DROP OUT OF HOR
                                                                                          AND VERT PATH TO
                                                                                          FPA,TKA,AND CAS
                                                                                          AUTO FLT MODES
                                                                                          ENTER FPA IN MCP

       10.00                                                                    000048    FLIGHT INSTRUMENT
                                                                                          SCAN -A2

       40.00                                                                    000048    FLIGHT INSTRUMENT
                                                                                          SCAN -A2

       70.00                                                                    000048    FLIGHT INSTRUMENT
                                                                                          SCAN -A2

       16.00                                                                    180013    SET NAV-1 TO RUNWAY
                                                                                          8L ILS -109.3

       16.00         21.00           5.00                                         . 8B   06   RETREIVE CHARTS

       21.00         26.00           5.00                                           8B160003  REVIEW CHARTS TO
                                                                                             DETERMINE RUNWAY 08
                                                                                             ILS FREQ AND REG VOR
                                                                                             FREQ

       26.00         31.08           5.08                                           5U   01   MON NAV-1 FREQ INDIC

       26.00         29.00           3.00                                           5U   02   SET NAV-1 FREQ -
                                                                                             WHOLE NO.S

       29.00         31.08           2.08                                           5U   03   SET NAV-1 FREQ -
                                                                                             FRACTIONS

       31.50         34.40           2.90                                           1P160059  CALL OUT -[RUNWAY 8L
                                                                                             ILS IS ON NAV 1]

       31.50         33.77           2.27                                           5H   02   MON VOR POINTER NO.1
                                                                                             ON VOR/RMI 2 INDIC

       80.00                                                                    00EV30    PILOT EXT VIS SCAN

       38.00                                                                    180039    SET ADF-1 TO CATTA
                                                                                             -375KC

       38.00         41.00           3.00                                           5D   17   SET ADF NO.1 BFO SW
                                                                                             TO OFF

       41.00         41.77           0.77                                           5D   22   MON ADF NO.1 TUNING
                                                                                             METER INDIC

       41.77         43.75           1.98                                           5D   01   MONITOR ADF NO 1
                                                                                             FREQ INDIC

       43.75         45.73           1.98                                           5D   02   SELECT ADF NO 1 FREQ
                                                                                             INDIC

       45.73         47.23           1.50                                           1P160065  CALL OUT -[CATTA
                                                                                             ON ADF-1]

       48.00                                                                    180040    SET ADF-2 TO FLANC
                                                                                             -344
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SINCE MISSION START BEGINNING	END	ACTIVITY TIME	EVENT/PROCEDURE TASK
49.00	51.69	2.69	5E 17 SEL ADF NO.2 FREQ BAND .19-.40
52.00	53.98	1.98	5E 01 MON ADF NO 2 FREQ. INDIC
52.00	53.98	1.98	5E 02 SELECT ADF NO 2 FREQ
52.00	54.20	2.20	5E 20 MON ADF NO.2 TUNING METER INDIC
54.00	55.50	1.50	1P100066 CALL OUT -[FLAMC ON ADF-2]
58.00			100022 SET DECISION HEIGTH ON RADIO ALTIMETER
64.00			030007 ENGINE INSTRUMENT SCAN
64.00	64.44	0.44	7F 25 MON ENG NO 1 EPR IND
64.00	64.44	0.44	7F 30 MON ENG NO 2 EPR IND
64.44	64.88	0.44	7F 21 MON NO 1 ENG N1 IND
64.44	64.88	0.44	7F 22 MON NO 2 ENG N1 IND
64.88	65.32	0.44	7F 31 MON ENG NO 1 EXH GAS TEMP IND
64.88	65.32	0.44	7F 32 MON ENG NO 2 EXH GAS TEMP IND
65.32	65.76	0.44	7F 23 MON NO 1 ENG N2 IND
65.32	65.76	0.44	7F 24 MON NO 2 ENG N2 IND
65.76	66.20	0.44	7F 33 MON ENG NO 1 FUEL FLOW INDIC
65.76	66.20	0.44	7F 34 MON ENG NO 2 FUEL FLOW INDIC
66.20	66.64	0.44	7F 09 MON NO 1 ENG OIL PRESS INDIC
66.64	67.08	0.44	7F 10 MON NO 1 ENG OIL TEMP INDIC
66.64	67.08	0.44	7F 15 MON NO 2 ENG OIL TEMP INDIC
67.08	67.52	0.44	7F 11 MON NO 1 ENG OIL QTY INDIC
67.08	67.52	0.44	7F 19 MON NO 2 ENG OIL QTY INDIC
67.52	67.96	0.44	7F 12 MON NO 1 ENG VIBRATION AMPLITUDE INDIC
67.52	67.96	0.44	7F 20 MON NO 2 ENG VIBR AMPLITUDE INDIC
70.00			100005 DESCENT AND APPROACH CHECKLIST - 1
70.00	72.00	2.00	1P 02 MONITOR CALL-OUT
72.00	77.00	5.00	5B 02 RETREIVE CHECKLIST
78.00	83.00	5.00	5B 06 FIND CHECKLIST IN HANDBOOK
83.00	85.00	2.00	5B 03 READ NEXT ITEM ON CHECKLIST
85.00	86.00	1.00	1P100044 CALL OUT-[ANTI-ICE]
87.00	87.80	0.80	1P100045 CALL OUT-(NOT REQD]
88.00	90.00	2.00	5B 03 READ NEXT ITEM ON CHECKLIST
90.00	91.80	1.80	1P100046 CALL OUT -[AIR CONDITIONING AND PRESSURIZATION]
92.00	94.67	2.67	7D 69 MON PASS CAB TEMP CONT SETTING
94.67	96.69	2.02	7D 70 MON CONT CAB TEMP CONT SETTING
96.69	97.86	1.17	7E 08 MON LDG ALT CNTR
98.00	98.40	0.40	1P100047 CALL OUT [SET]
100.00			100006 DESCENT AND APPROACH CHECKLIST - 2
100.00	102.00	2.00	5B 03 READ NEXT ITEM ON CHECKLIST

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SINCE MISSION START BEGINNING	END	ACTIVITY TIME	EVENT/PROCEDURE TASK
102.00	102.80	0.80	1P160049 CALL OUT-[START SWITCHES]
108.50	109.00	0.50	1P 06 MONITOR REPORT
109.00	111.00	2.00	8B 03 READ NEXT ITEM ON CHECKLIST
111.00	112.10	1.10	1P160050 CALL OUT-[INBOARD LANDING LIGHTS]
112.00	114.20	2.20	7G 17 SET LANDING LIGHTS SW TO ON
114.20	114.50	0.30	1P160051 CALL OUT -[ON]
114.50	116.50	2.00	8B 03 READ NEXT ITEM ON CHECKLIST
116.50	117.90	1.40	1P160052 CALL OUT -[ALTIMETER AND INSTRUMENTS]
118.00	120.37	2.37	3H 02 MON CORR BARO ALT INDIC
120.37	123.37	3.00	3H 05 F.O. CHECK CAPT<S ALTIMETER BARO SET AND INDICATED ALTITUDE
123.40	124.70	1.30	1P160053 CALL OUT-[SET AND CROSSCHECKED]
126.00			160007 DESCENT AND APPROACH CHECKLIST - 3
126.00	128.00	2.00	8B 03 READ NEXT ITEM ON CHECKLIST
128.00	129.50	1.50	1P160054 CALL OUT-[EPR AND IAS BUGS]
128.00	131.00	3.00	8B010004 RETREIVE FLIGHT PLANNING REF. DATA MANUAL
131.00	136.00	5.00	8B160001 DETERMINE GO-AROUND EPR BUG SET VALUE
136.00	138.32	2.32	7F 26 SET ENG NO 1 EPR BUG
136.32	138.32	2.00	7F 27 MON ENG NO 1 EPR BUG
138.32	140.64	2.32	7F 28 SET ENG NO 2 EPR BUG
138.64	140.64	2.00	7F 29 MON ENG NO 2 EPR BUG
141.00	146.00	5.00	8B160002 DETERMINE LANDING V-REF BUG SET VALUE
146.00	148.57	2.57	3A 07 MON V-REF BUG SETTING
146.00	148.57	2.57	3A 08 SET V-REF BUG
146.00	147.90	1.90	1P160055 CALL OUT -[V-REF IS XXX KNOTS]
151.00	154.00	3.00	3A 12 F.O. CHECK CAPTIS V-REF BUG SETTING
154.00	155.80	1.80	1P160056 CALL OUT -[BUGS SET AND CROSS-CHECKED]
155.00	157.00	2.00	8B 03 READ NEXT ITEM ON CHECKLIST
155.60	156.90	1.30	1P160057 CALL OUT -[CHECKLIST COMPLETED]
157.00	160.00	3.00	8B 08 STOW CHECKLIST
160.00	162.00	2.00	8B010005 STOW FLIGHT PLANNING REF. DATA MANUAL
165.00			030007 ENGINE INSTRUMENT SCAN
165.00	165.44	0.44	7F 25 MON ENG NO 1 EPR IND
165.00	165.44	0.44	7F 30 MON ENG NO 2 EPR IND
165.44	165.88	0.44	7F 21 MON NO 1 ENG N1 IND
165.44	165.88	0.44	7F 22 MON NO 2 ENG N1 IND
165.88	166.32	0.44	7F 31 MON ENG NO 1 EXH GAS TEMP IND
165.88	166.32	0.44	7F 32 MON ENG NO 2 EXH GAS TEMP IND
166.32	166.76	0.44	7F 23 MON NO 1 ENG N2 IND

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SINCE MISSION START          ACTIVITY                          EVENT/PROCEDURE
BEGINNING       END          TIME                                 TASK

166.32      166.76               0.44                          7F     24   MON NO 2 ENG N2 IND

166.76      167.20               0.44                          7F     33   MON ENG NO 1 FUEL
                                                                           FLOW INDIC

166.76      167.20               0.44                          7F     34   MON ENG NO 2 FUEL
                                                                           FLOW INDIC

167.20      167.64               0.44                          7F     09   MON NO 1 ENG OIL
                                                                           PRESS INDIC

167.64      168.08               0.44                          7F     10   MON NO 1 ENG OIL
                                                                           TEMP INDIC

167.64      168.08               0.44                          7F     18   MON NO 2 ENG OIL
                                                                           TEMP INDIC

168.08      168.52               0.44                          7F     11   MON NO 1 ENG OIL QTY
                                                                           INDIC

168.08      168.52               0.44                          7F     19   MON NO 2 ENG OIL
                                                                           QTY INDIC

168.52      168.96               0.44                          7F     12   MON NO 1 ENG VIBRA-
                                                                           TION AMPLITUDE INDIC

168.52      168.96               0.44                          7F     20   MON NO 2 ENG VIBR
                                                                           AMPLITUDE INDIC

150.00                                                      00EV05   C/P EXT VIS SCAN

150.00      175.00              25.00                          8A     11    PILOT  EXTERNAL
                                                                           VISION SCAN

185.00                                                      090051   FLIGHT INSTRUMENT
                                                                     SCAN -A1

195.00                                                      180040   MON ADF/RMI-2

195.00      197.20               2.20                          5E     30   MON ADF NO.1 POINTER
                                                                           ON ADF/RMI 2 INDIC

195.00                                                      180091   HANDOFF TO ATL FINAL
                                                                     APPROACH CONTROLLER

195.00      207.00              12.00                          1P10XX91    N 515,TURN RT HDG270
                                                                           DESCND AND MAINTAIN
                                                                           6000 FT,CONTACT ATL
                                                                           APPR ON 127.25.

207.00      214.00               7.00                          1A     25   ACTUATE COMM 2 PUSH-
                                                                           TO-TALK SW

207.00      214.00               7.00                          1P10YY91    515,ROGER,HDG 270,
                                                                           MAINTAIN 6000,APPR
                                                                           ON 127.25.

200.00                                                      180081   ENTER/ARM NEW
                                                                     ALT IN MCP

200.00                                                      18BL02   BEGIN TURN TO DOWN-
                                                                     WIND LEG

205.00                                                      180082   ENTER NEW HEADNG
                                                                     IN MCP

210.00                                                      18BL03   DESCEND THRU 11000.

210.00                                                      090051   FLIGHT INSTRUMENT
                                                                     SCAN -A1

219.00                                                      180092   TUNE ATL APPROACH
                                                                     ON 127.25

219.00      223.80               4.80                          1B     01   MON VHF-2L FREQ IND

219.00      221.90               2.90                          1B     02   SET VHF-2L FREQ-
                                                                           WHOLE NO.S

221.90      223.80               1.90                          1B     03   SET VHF-2L FREQ -
                                                                           FRACTIONS

226.00                                                      180093   CONTACT ATL APPROACH
                                                                     ON 127.25

226.00      227.40               1.40                          1B     05   SET VHF-2 COMM TFR
                                                                           SW TO LEFT

228.40      231.90               3.50                          1A     10   ACT PUSH-TO-TALK SW

228.40      231.90               3.50                          1P10XX93    ATL APPR,NASA 515
                                                                           DESCENDING TO 6000.

231.90      235.90               4.00                          1P10YY90    NASA 515,ATL APPR,
                                                                           ROGER.

220.00                                                      090048   FLIGHT INSTRUMENT
                                                                     SCAN -A2

240.00                                                      00EV09   C/P EXT VIS SCAN
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SINCE MISSION START		ACTIVITY TIME	EVENT/PROCEDURE TASK
BEGINNING	END		
240.00	285.00	45.00	8A 12 PILOT EXTERNAL VISION SCAN
250.00			000048 FLIGHT INSTRUMENT SCAN -A2
280.00			000048 FLIGHT INSTRUMENT SCAN -A2
310.00			000048 FLIGHT INSTRUMENT SCAN -A2
340.00			000048 FLIGHT INSTRUMENT SCAN -A2
288.00			030007 ENGINE INSTRUMENT SCAN
288.00	288.44	0.44	7F 25 MON ENG NO 1 EPR IND
288.00	288.44	0.44	7F 30 MON ENG NO 2 EPR IND
288.44	288.88	0.44	7F 21 MON NO 1 ENG N1 IND
288.44	288.88	0.44	7F 22 MON NO 2 ENG N1 IND
288.88	289.32	0.44	7F 31 MON ENG NO 1 EXH GAS TEMP IND
288.88	289.32	0.44	7F 32 MON ENG NO 2 EXH GAS TEMP IND
289.32	289.76	0.44	7F 23 MON NO 1 ENG N2 IND
289.32	289.76	0.44	7F 24 MON NO 2 ENG N2 IND
289.76	290.20	0.44	7F 33 MON ENG NO 1 FUEL FLOW INDIC
289.76	290.20	0.44	7F 34 MON ENG NO 2 FUEL FLOW INDIC
290.20	290.64	0.44	7F 09 MON NO 1 ENG OIL PRESS INDIC
290.64	291.08	0.44	7F 10 MON NO 1 ENG OIL TEMP INDIC
290.64	291.08	0.44	7F 18 MON NO 2 ENG OIL TEMP INDIC
291.08	291.52	0.44	7F 11 MON NO 1 ENG OIL QTY INDIC
291.08	291.52	0.44	7F 19 MON NO 2 ENG OIL QTY INDIC
291.52	291.96	0.44	7F 12 MON NO 1 ENG VIBRATION AMPLITUDE INDIC
291.52	291.96	0.44	7F 20 MON NO 2 ENG VIBR AMPLITUDE INDIC
295.00			00EV09 C/P EXT VIS SCAN
295.00	340.00	45.00	8A 12 PILOT EXTERNAL VISION SCAN
340.00			00EV04 C/P EXT VIS SCAN
340.00	360.00	20.00	8A 10 PILOT EXTERNAL VISION SCAN
383.00			030007 ENGINE INSTRUMENT SCAN
383.00	383.44	0.44	7F 25 MON ENG NO 1 EPR IND
383.00	383.44	0.44	7F 30 MON ENG NO 2 EPR IND
383.44	383.88	0.44	7F 21 MON NO 1 ENG N1 IND
383.44	383.88	0.44	7F 22 MON NO 2 ENG N1 IND
383.88	384.32	0.44	7F 31 MON ENG NO 1 EXH GAS TEMP IND
383.88	384.32	0.44	7F 32 MON ENG NO 2 EXH GAS TEMP IND
384.32	384.76	0.44	7F 23 MON NO 1 ENG N2 IND
384.32	384.76	0.44	7F 24 MON NO 2 ENG N2 IND
384.76	385.20	0.44	7F 33 MON ENG NO 1 FUEL FLOW INDIC
384.76	385.20	0.44	7F 34 MON ENG NO 2 FUEL FLOW INDIC
385.20	385.64	0.44	7F 09 MON NO 1 ENG OIL PRESS INDIC

SINCE MISSION START		ACTIVITY	EVENT/PROCEDURE
BEGINNING	END	TIME	TASK
365.64	366.08	0.44	7F 10 MON NO 1 ENG OIL TEMP INDIC
365.64	366.08	0.44	7F 18 MON NO 2 ENG OIL TEMP INDIC
366.08	366.52	0.44	7F 11 MON NO 1 ENG OIL QTY INDIC
366.08	366.52	0.44	7F 19 MON NO 2 ENG OIL QTY INDIC
366.52	366.96	0.44	7F 12 MON NO 1 ENG VIBRATION AMPLITUDE INDIC
366.52	366.96	0.44	7F 20 MON NO 2 ENG VIBR AMPLITUDE INDIC
370.00			16BL04 DESCEND THRU 6600.
370.00			160094 ALTITUDE STEP DOWN FROM ATL APPROACH
370.00	375.00	5.00	1P16XX94 NASA 515,DESCEND AND MAINTAIN 6000 FT.
375.00	378.50	3.50	1A 10 ACT PUSH-TO-TALK SW
375.00	378.50	3.50	1P16YY94 515,ROGER,MAINTAIN 6000.
375.00			160081 ENTER/ARM NEW ALT IN MCP
385.00			090046 FLIGHT INSTRUMENT SCAN -A2
415.00			090046 FLIGHT INSTRUMENT SCAN -A2
445.00			090048 FLIGHT INSTRUMENT SCAN -A2
475.00			090049 FLIGHT INSTRUMENT SCAN -A2
505.00			090051 FLIGHT INSTRUMENT SCAN -A1
385.00			00EV08 C/P EXT VIS SCAN
385.00	425.00	40.00	8A 11 PILOT EXTERNAL VISION SCAN
430.00			030007 ENGINE INSTRUMENT SCAN
430.00	430.44	0.44	7F 29 MON ENG NO 1 EPR IND
430.00	430.44	0.44	7F 30 MON ENG NO 2 EPR IND
430.44	430.88	0.44	7F 21 MON NO 1 ENG N1 IND
430.44	430.88	0.44	7F 22 MON NO 2 ENG N1 IND
430.88	431.32	0.44	7F 31 MON ENG NO 1 EXH GAS TEMP IND
430.88	431.32	0.44	7F 32 MON ENG NO 2 EXH GAS TEMP IND
431.32	431.76	0.44	7F 23 MON NO 1 ENG N2 IND
431.32	431.76	0.44	7F 24 MON NO 2 ENG N2 IND
431.76	432.20	0.44	7F 33 MON ENG NO 1 FUEL FLOW INDIC
431.76	432.20	0.44	7F 34 MON ENG NO 2 FUEL FLOW INDIC
432.20	432.64	0.44	7F 09 MON NO 1 ENG OIL PRESS INDIC
432.64	433.08	0.44	7F 10 MON NO 1 ENG OIL TEMP INDIC
432.64	433.08	0.44	7F 18 MON NO 2 ENG OIL TEMP INDIC
433.08	433.52	0.44	7F 11 MON NO 1 ENG OIL QTY INDIC
433.08	433.52	0.44	7F 19 MON NO 2 ENG OIL QTY INDIC
433.52	433.96	0.44	7F 12 MON NO 1 ENG VIBRATION AMPLITUDE INDIC
433.52	433.96	0.44	7F 20 MON NO 2 ENG VIBR AMPLITUDE INDIC
440.00			00EV03 C/P EXT VIS SCAN

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SINCE MISSION START BEGINNING	END	ACTIVITY TIME	EVENT/PROCEDURE TASK
440.00	458.00	18.00	8A 10 PILOT EXTERNAL VISION SCAN
450.00			160002 TUNE ATIS -119.85
450.00	454.98	4.98	1A 07 MON VHF-1R FREQ IND
450.00	452.01	2.01	1A 08 SET VHF-1R FREQ. WHOLE NO.S
453.00	454.98	1.98	1A 09 SET VHF-1R FREQ - FRACTIONS
455.00	457.39	2.39	1A 06 SET VHF-1 COMM TFR SW TO RIGHT
456.43	457.95	1.52	1A 17 SET COMM 2 VHF-1 COMM RECVR SW TO ON
458.00	482.00	24.00	1A 15 MON VHF-1 COMM AUDIO
458.00	461.42	3.42	1P160001 MON RADIO COMM - [INFORMATION LIMA ONE SEVEN ZERO FIVE OBSERVATION- TWO
461.42	465.98	4.56	1P160002 FIVE HUNDRED SCATTERED CEILING FOUR THOUSAND BROKEN. VISIBILITY ONE SIX.
465.98	470.54	4.56	1P160003 TEMPERATURE FIVE NINER. WIND ONE ONE ZERO DEGREES AT TEN GUSTING TO ONE SEVEN
470.54	475.10	4.56	1P160004 . ALTIMETER TWO - NINER EIGHT FOUR. SIMULTANEOUS PARALLEL APPROACHES IN
475.10	479.66	4.56	1P160005 OPERATION ON RUNWAYS EIGHT LEFT AND NINER RIGHT. ADVISE CONTROLLER ON INITIAL
479.66	481.94	2.28	1P160006 CONTACT YOU HAVE INFORMATION LIMA.]
480.00			160048 MON ADF/RMI-2
480.00	482.28	2.28	5E 28 MON ADF NO.1 POINTER ON ADF/RMI 2 INDIC
480.00			16BL05 CROSS FT NDB
485.00			06EV09 C/P EXT VIS SCAN
465.00	510.00	45.00	8A 12 PILOT EXTERNAL VISION SCAN
490.00			160003 SET ALTIMETER BARO SETTING TO 29.84
490.00	492.00	2.00	1P160043 CALL OUT-[DESCENT AND APPROACH CHECK-LIST]
494.00			140032 ALTIMETER BARO SET PROC.
494.00	496.05	2.05	3H 04 MONITOR ALTIMETER BARO SETTING INDIC
494.00	496.05	2.05	3H 03 SET ALTIMETER BARO SETTING CONTROL
513.00			030007 ENGINE INSTRUMENT SCAN
513.00	513.44	0.44	7F 29 MON ENG NO 1 EPR IND
513.00	513.44	0.44	7F 30 MON ENG NO 2 EPR IND
513.44	513.88	0.44	7F 21 MON NO 1 ENG N1 IND
513.44	513.88	0.44	7F 22 MON NO 2 ENG N1 IND
513.88	514.32	0.44	7F 31 MON ENG NO 1 EXH GAS TEMP IND
513.88	514.32	0.44	7F 32 MON ENG NO 2 EXH GAS TEMP IND
514.32	514.76	0.44	7F 23 MON NO 1 ENG N2 IND
514.32	514.76	0.44	7F 24 MON NO 2 ENG N2 IND
514.76	515.20	0.44	7F 33 MON ENG NO 1 FUEL FLOW INDIC
514.76	515.20	0.44	7F 34 MON ENG NO 2 FUEL FLOW INDIC

SINCE MISSION START BEGINNING	END	ACTIVITY TIME	EVENT/PROCEDURE TASK
515.20	515.64	0.44	7F 09 MON NO 1 ENG OIL PRESS INDIC
515.64	516.08	0.44	7F 10 MON NO 1 ENG OIL TEMP INDIC
515.64	516.08	0.44	7F 18 MON NO 2 ENG OIL TEMP INDIC
516.08	516.52	0.44	7F 11 MON NO 1 ENG OIL QTY INDIC
516.08	516.52	0.44	7F 19 MON NO 2 ENG OIL QTY INDIC
516.52	516.96	0.44	7F 12 MON NO 1 ENG VIBRATION AMPLITUDE INDIC
516.52	516.96	0.44	7F 20 MON NO 2 ENG VIBR AMPLITUDE INDIC
519.00			180041 MON VOR/RMI-1
520.00			180095 VECTOR FOR BASE LEG FROM ATL APPROACH
520.00	525.00	5.00	1P16XX95 NASA 515,TURN LEFT HEADING 180.
525.00	528.50	3.50	1A 10 ACT PUSH-TO-TALK SW
525.00	528.50	3.50	1P16YY95 515,ROGER,HEADING 180.
533.00			180082 ENTER NEW HEADNG IN MCP
533.00			16BL06 BEGIN TURN TO BASE
540.00			140023 REPORT 1000 FT TO LEVEL OFF
540.00	542.13	2.13	3H 02 MON CORR BARO ALT INDIC
542.00	543.70	1.70	1P140045 CALL OUT -(1000 FEET TO LEVEL OFF)
550.00			60EV03 C/P EXT VIS SCAN
550.00	565.00	15.00	8A 10 PILOT EXTERNAL VISION SCAN
555.00			090051 FLIGHT INSTRUMENT SCAN -A1
565.00			180041 MON VOR/RMI-1
569.00			180042 MON ADF/RMI-1
570.00			180096 VECTOR TO INTERCEPT AND FINAL APPROACH CLEARANCE FROM ATL APPROACH CONTROL
570.00	580.00	10.00	1P16XX96 NASA 515,12 MILES FROM OM,TURN LT HDG 110,MAINTAIN 3000 FT UNTIL CROSSING BAHRR
587.00	594.00	7.00	1A 25 ACTUATE COMM 2 PUSH-TO-TALK SW
587.00	594.00	7.00	1P16YY96 515 ROGER,CLEARED FOR ILS 8 LEFT APPR. TOWER AT BAHRR.
580.00	587.00	7.00	1P16ZZ96 CLEARED FOR ILS RUNWAY 8 LEFT APPROACH. CONTACT TOWER ON 119.5 AT BAHRR.
576.00			180082 ENTER NEW HEADNG IN MCP
575.00			16BL07 TURN TO INTERCEPT FINAL APPR. COURSE
585.00			180083 ARM LAND MODE
597.00			180034 TUNE ATLANTA TOWER -119.5
597.00	601.86	4.86	1B 07 MON VHF-2R FREQ IND
597.00	599.86	2.86	1B 08 SET VHF-2R FREQ - WHOLE NO.S
599.86	601.86	1.98	1B 09 SET VHF-2R FREQ - FRACTIONS
600.00			180070 FLIGHT INSTRUMENT SCAN -A1, PILOT

SINCE MISSION START BEGINNING	END	ACTIVITY TIME	EVENT/PROCEDURE TASK
607.00			100073 FLIGHT INSTRUMENT SCAN -A1, COPILOT
607.00	617.00	10.00	2K 14 MON MAP VIDEO
607.00	617.00	10.00	2K 46 MON STRAIGHT TREND VECTOR SYMBOL
607.00	617.00	10.00	2K 33 MON CURVED TREND VECTOR SYMBOLS
607.00	617.00	10.00	2J 05 MON FLT PATH ANGLE INDIC
607.00	617.00	10.00	2J 04 MON FLT PATH ACCEL INDIC
607.00	617.00	10.00	2J 01 MON ROLL ATT INDIC
607.00	617.00	10.00	2J 19 MON PITCH REF INDIC
607.00	617.00	10.00	3A 10 MONITOR AIRSPEED INDIC
610.00			100084 CAPTURE AN ALT IN ALT SEL MODE
610.00			10BL08 LEVEL OFF AT 6000 FT BEGIN DECEL FROM 250 TO 210 KCAS
617.00			100073 FLIGHT INSTRUMENT SCAN -A1, COPILOT
617.00	627.00	10.00	2K 14 MON MAP VIDEO
617.00	627.00	10.00	2K 46 MON STRAIGHT TREND VECTOR SYMBOL
617.00	627.00	10.00	2K 33 MON CURVED TREND VECTOR SYMBOLS
617.00	627.00	10.00	2J 05 MON FLT PATH ANGLE INDIC
617.00	627.00	10.00	2J 04 MON FLT PATH ACCEL INDIC
617.00	627.00	10.00	2J 01 MON ROLL ATT INDIC
617.00	627.00	10.00	2J 19 MON PITCH REF INDIC
617.00	627.00	10.00	3A 10 MONITOR AIRSPEED INDIC
618.00			100085 ENTER NEW SPEED IN CAS WINDOW
623.00			100086 CAPTURE LOCALIZER
623.00	625.19	2.19	2J 13 MON ILS BOX INDIC
625.00	626.30	1.30	1P100087 CALL OUT -[LOCALIZER ALIVE]
626.00			100071 FLIGHT INSTRUMENT SCAN -A2, PILOT
627.00			100073 FLIGHT INSTRUMENT SCAN -A1, COPILOT
627.00	637.00	10.00	2K 14 MON MAP VIDEO
627.00	637.00	10.00	2K 46 MON STRAIGHT TREND VECTOR SYMBOL
627.00	637.00	10.00	2K 33 MON CURVED TREND VECTOR SYMBOLS
627.00	637.00	10.00	2J 05 MON FLT PATH ANGLE INDIC
627.00	637.00	10.00	2J 04 MON FLT PATH ACCEL INDIC
627.00	637.00	10.00	2J 01 MON ROLL ATT INDIC
627.00	637.00	10.00	2J 19 MON PITCH REF INDIC
627.00	637.00	10.00	3A 10 MONITOR AIRSPEED INDIC
637.00			100073 FLIGHT INSTRUMENT SCAN -A1, COPILOT
637.00	647.00	10.00	2K 14 MON MAP VIDEO
637.00	647.00	10.00	2K 46 MON STRAIGHT TREND VECTOR SYMBOL
637.00	647.00	10.00	2K 33 MON CURVED TREND VECTOR SYMBOLS

SINCE MISSION START BEGINNING	END	ACTIVITY TIME	EVENT/PROCEDURE	TASK	
637.00	647.00	10.00	2J	05	MON FLT PATH ANGLE INDIC
637.00	647.00	10.00	2J	04	MON FLT PATH ACCEL INDIC
637.00	647.00	10.00	2J	01	MON ROLL ATT INDIC
637.00	647.00	10.00	2J	19	MON PITCH REF INDIC
637.00	647.00	10.00	3A	10	MONITOR AIRSPEED INDIC
643.00			160045		ANNUNCIATOR RECALL
643.00	645.28	2.28	7A	28	ACTUATE ANNUN PNL RECALL SW
645.28	645.81	0.53	7A	38	MON ALL ANNUN LTS
647.00			160073		FLIGHT INSTRUMENT SCAN -A1, COPILOT
647.00	657.00	10.00	2K	14	MON MAP VIDEO
647.00	657.00	10.00	2K	48	MON STRAIGHT TREND VECTOR SYMBOL
647.00	657.00	10.00	2K	33	MON CURVED TREND VECTOR SYMBOLS
647.00	657.00	10.00	2J	05	MON FLT PATH ANGLE INDIC
647.00	657.00	10.00	2J	04	MON FLT PATH ACCEL INDIC
647.00	657.00	10.00	2J	01	MON ROLL ATT INDIC
647.00	657.00	10.00	2J	19	MON PITCH REF INDIC
647.00	657.00	10.00	3A	10	MONITOR AIRSPEED INDIC
655.00			160041		MON VOR/RMI-1
657.00			160042		MON ADF/RMI-1
657.00			160048		MON ADF/RMI-2
657.00	659.28	2.28	6E	28	MON ADF NO.1 POINTER ON ADF/RMI 2 INDIC
660.00			16BL09		REACH 210 KCAS
660.00			160087		CAPTURE GLIDE SLOPE
664.00			160061		CONTACT TOWER FOR FINAL LANDING CLEARANCE
664.00	665.45	1.45	1B	08	SET VHF-2 COMM TFR SW TO RIGHT
666.40	671.40	5.00	1B	25	ACT PUSH-TO-TALK SW ON CONTROL HANDGRIP
666.40	671.40	5.00	1B	17	COMM VIA VHF-2
670.40	674.40	4.00	1P	160038	RADIO COMM-[ATLANTA TOWER, NASA 515 IS BAHRR.
674.40	681.40	7.00	1B	19	MON VHF-2 COMM AUDIO
674.40	678.40	4.00	1P	160040	MON RADIO COMM - [NASA 515, NO. 3 FOR 8L.DC-9 3 MI AHEAD.WIND 110
678.40	681.40	3.00	1P	160041	AT NINE.CLEARED TO LAND RW 8L.
681.40	683.10	1.70	1B	29	ACTUATE COMM 2 PUSH-TO-TALK SW
681.40	683.10	1.70	1B	15	COMM VIA VHF-2
681.40	683.10	1.70	1P	160037	RADIO COMM - [515, ROGER]
684.00			16BL10		CROSS BAHRR
684.00			160011		SET FLAPS TO FLAPS 1
684.00	684.70	0.70	1P	10	MONITOR CALL-OUT
685.00	687.69	2.69	4E	07	SET FLAP CONT LEVER TO FLAPS 1
687.69	689.92	2.23	4E	15	MONITOR FLAP POSITION INDICATOR

ORIGINAL PAGE IS
OF POOR QUALITY

SINCE MISSION START BEGINNING	END	ACTIVITY TIME	EVENT/PROCEDURE TASK
689.92	691.09	1.17	4N 03 MON LE FLAPS-IN-TRANSIT LT ON
691.09	692.26	1.17	4N 04 MON LE FLAPS-IN-TRANSIT LT OFF
692.26	692.96	0.70	1P180058 CALL OUT -(FLAPS 1)
670.00			180071 FLIGHT INSTRUMENT SCAN -A2, PILOT
683.00			18BL11 REACH 190 KCAS
694.00			180017 SET FLAPS TO FLAPS 5
695.00	697.09	2.09	4E 09 SET FLAP CONT LEVER TO FLAPS 5
699.00	699.70	0.70	1P180081 CALL OUT -(FLAPS 5)
694.00			180018 FLAP SET PROCEDURE
694.00	694.70	0.70	1P 10 MONITOR CALL-OUT
696.69	698.92	2.23	4E 13 MONITOR FLAP POSITION INDICATOR
698.71	701.21	2.50	4E 16 CHECK FLAP LEVER AND POSITION INDIC AGREE
697.69	698.86	1.17	4N 03 MON LE FLAPS-IN-TRANSIT LT ON
698.86	700.03	1.17	4N 04 MON LE FLAPS-IN-TRANSIT LT OFF
699.00			030007 ENGINE INSTRUMENT SCAN
699.00	699.44	0.44	7F 25 MON ENG NO 1 EPR IND
699.00	699.44	0.44	7F 30 MON ENG NO 2 EPR IND
699.44	699.88	0.44	7F 21 MON NO 1 ENG N1 IND
699.44	699.88	0.44	7F 22 MON NO 2 ENG N1 IND
699.88	700.32	0.44	7F 31 MON ENG NO 1 EXH GAS TEMP IND
699.88	700.32	0.44	7F 32 MON ENG NO 2 EXH GAS TEMP IND
700.32	700.76	0.44	7F 23 MON NO 1 ENG N2 IND
700.32	700.76	0.44	7F 24 MON NO 2 ENG N2 IND
700.76	701.20	0.44	7F 33 MON ENG NO 1 FUEL FLOW INDIC
700.76	701.20	0.44	7F 34 MON ENG NO 2 FUEL FLOW INDIC
701.20	701.64	0.44	7F 09 MON NO 1 ENG OIL PRESS INDIC
701.64	702.08	0.44	7F 10 MON NO 1 ENG OIL TEMP INDIC
701.64	702.08	0.44	7F 18 MON NO 2 ENG OIL TEMP INDIC
702.08	702.52	0.44	7F 11 MON NO 1 ENG OIL QTY INDIC
702.08	702.52	0.44	7F 19 MON NO 2 ENG OIL QTY INDIC
702.52	702.96	0.44	7F 12 MON NO 1 ENG VIBRATION AMPLITUDE INDIC
702.52	702.96	0.44	7F 20 MON NO 2 ENG VIBR AMPLITUDE INDIC
700.00			180071 FLIGHT INSTRUMENT SCAN -A2, PILOT
708.00			18BL12 REACH 170 KCAS
710.00			180073 FLIGHT INSTRUMENT SCAN -A1, COPILOT
710.00	720.00	10.00	2K 14 MON MAP VIDEO
710.00	720.00	10.00	2K 46 MON STRAIGHT TREND VECTOR SYMBOL
710.00	720.00	10.00	2K 33 MON CURVED TREND VECTOR SYMBOLS
710.00	720.00	10.00	2J 05 MON FLT PATH ANGLE INDIC

SINCE MISSION START BEGINNING	END	ACTIVITY TIME	EVENT/PROCEDURE TASK		
710.00	720.00	10.00	2J	04	MON FLT PATH ACCEL INDIC
710.00	720.00	10.00	2J	01	MON ROLL ATT INDIC
710.00	720.00	10.00	2J	19	MON PITCH REF INDIC
710.00	720.00	10.00	3A	10	MONITOR AIRSPEED INDIC
720.00			180073		FLIGHT INSTRUMENT SCAN -A1, COPILOT
720.00	730.00	10.00	2K	14	MON MAP VIDEO
720.00	730.00	10.00	2K	46	MON STRAIGHT TREND VECTOR SYMBOL
720.00	730.00	10.00	2K	33	MON CURVED TREND VECTOR SYMBOLS
720.00	730.00	10.00	2J	05	MON FLT PATH ANGLE INDIC
720.00	730.00	10.00	2J	04	MON FLT PATH ACCEL INDIC
720.00	730.00	10.00	2J	01	MON ROLL ATT INDIC
720.00	730.00	10.00	2J	19	MON PITCH REF INDIC
720.00	730.00	10.00	3A	10	MONITOR AIRSPEED INDIC
730.00			180073		FLIGHT INSTRUMENT SCAN -A1, COPILOT
730.00	740.00	10.00	2K	14	MON MAP VIDEO
730.00	740.00	10.00	2K	46	MON STRAIGHT TREND VECTOR SYMBOL
730.00	740.00	10.00	2K	33	MON CURVED TREND VECTOR SYMBOLS
730.00	740.00	10.00	2J	05	MON FLT PATH ANGLE INDIC
730.00	740.00	10.00	2J	04	MON FLT PATH ACCEL INDIC
730.00	740.00	10.00	2J	01	MON ROLL ATT INDIC
730.00	740.00	10.00	2J	19	MON PITCH REF INDIC
730.00	740.00	10.00	3A	10	MONITOR AIRSPEED INDIC
730.00			00EV21		PILOT EXT VIS SCAN
740.00			180089		SET SPEED BRAKES
744.00			180045		MON ADF/RMI-2
744.00	746.28	2.28	5E	26	MON ADF NO.1 POINTER ON ADF/RMI 2 INDIC
746.00			180071		FLIGHT INSTRUMENT SCAN -A2, PILOT
748.00			18BL13		CROSS REIFF
748.00			180070		SET AUTO BRAKES
748.00	750.02	2.02	4D	43	SET AUTO BRAKE SEL SW TO MED
750.02	750.30	0.28	4D	40	MON AUTO BRAKE INOP LT OFF
755.00			00EV01		C/P EXT VIS SCAN
755.00	760.00	5.00	8A	10	PILOT EXTERNAL VISION SCAN
765.00			180073		FLIGHT INSTRUMENT SCAN -A1, COPILOT
765.00	775.00	10.00	2K	14	MON MAP VIDEO
765.00	775.00	10.00	2K	46	MON STRAIGHT TREND VECTOR SYMBOL
765.00	775.00	10.00	2K	33	MON CURVED TREND VECTOR SYMBOLS
765.00	775.00	10.00	2J	05	MON FLT PATH ANGLE INDIC
765.00	775.00	10.00	2J	04	MON FLT PATH ACCEL INDIC
765.00	775.00	10.00	2J	01	MON ROLL ATT INDIC

ORIGINAL PAGE IS
OF POOR QUALITY

SINCE MISSION START		ACTIVITY TIME	EVENT/PROCEDURE TASK		
BEGINNING	END				
765.00	775.00	10.00	2J	19	MON PITCH REF INDIC
765.00	775.00	10.00	3A	10	MONITOR AIRSPEED INDIC
775.00			160073		FLIGHT INSTRUMENT SCAN -A1, COPILOT
775.00	785.00	10.00	2K	14	MON MAP VIDEO
775.00	785.00	10.00	2K	46	MON STRAIGHT TREND VECTOR SYMBOL
775.00	785.00	10.00	2K	33	MON CURVED TREND VECTOR SYMBOLS
775.00	785.00	10.00	2J	05	MON FLT PATH ANGLE INDIC
775.00	785.00	10.00	2J	04	MON FLT PATH ACCEL INDIC
775.00	785.00	10.00	2J	01	MON ROLL ATT INDIC
775.00	785.00	10.00	2J	19	MON PITCH REF INDIC
775.00	785.00	10.00	3A	10	MONITOR AIRSPEED INDIC
775.00			160071		FLIGHT INSTRUMENT SCAN -A2, PILOT
800.00			160058		REPORT RUNWAY IN SIGHT
800.00	802.00	2.00	8A	01	VIEW RUNWAY AHEAD
802.00	803.00	1.00	1P160074		CALL OUT -[RUNWAY IN SITE]
805.00			00EV21		PILOT EXT VIS SCAN
808.00			160018		FLAP SET PROCEDURE
808.00	808.70	0.70	1P	10	MONITOR CALL-OUT
810.59	812.82	2.23	4E	15	MONITOR FLAP POSITION INDICATOR
812.71	815.21	2.50	4E	16	CHECK FLAP LEVER AND POSITION INDIC AGREE
811.69	812.86	1.17	4H	03	MON LE FLAPS-IN-TRANSIT LT ON
812.86	814.03	1.17	4H	04	MON LE FLAPS-IN-TRANSIT LT OFF
809.00			160025		SET FLAPS TO FLAPS 15
809.00	811.48	2.48	4E	11	SET FLAP CONT LEVER TO FLAPS 15
813.00	813.70	0.70	1P160082		CALL OUT -[FLAPS 15]
812.00			160042		MON ADF/RMI-1
815.00			160059		CROSS RWY 09 OUTER MARKER
815.00	815.72	0.72	3V	11	MONITOR OUTER MARKER LT ON AND AUDIBLE SIGNAL
817.00	818.80	1.80	1P	13	MONITOR CALL-OUT
815.00			160L14		CROSS CATTA LOM-GEAR THEN EXTENDED AND 165 KCAS MAINTAINED
815.00			160049		MON RADIO ALTIMETER
815.00	817.00	2.00	3J	01	MON RADIO ALT ALTITUDE INDIC
820.00			160080		EXTEND LANDING GEAR
820.00	823.27	3.27	4D	03	SET LANDING GEAR LEVER TO DOWN POSITION
823.00	823.54	0.54	4D	05	MONITOR NOSE GEAR DOWN AND LOCKED LT ON
823.50	824.04	0.54	4D	09	MONITOR LEFT/RT GEAR DOWN AND LOCKED LT ON
820.00			160071		FLIGHT INSTRUMENT SCAN -A2, PILOT
845.00			160082		LANDING CHECKLIST

SINCE MISSION START		ACTIVITY TIME	EVENT/PROCEDURE TASK
BEGINNING	END		
845.00	846.00	1.00	5B090001 READ NEXT ITEM ON CHECKLIST ON CONTROL COLUMN PLACARD
847.00	847.60	0.60	1P180076 CALL OUT -[RECALL]
847.60	848.00	0.40	1P180077 CALL OUT -[CHECKED]
848.00	849.00	1.00	5B090001 READ NEXT ITEM ON CHECKLIST ON CONTROL COLUMN PLACARD
850.00	850.70	0.70	1P180078 CALL OUT -[SPEED BRAKES]
851.00	852.30	1.30	1P 02 MONITOR CALL-OUT
852.50	853.50	1.00	5B090001 READ NEXT ITEM ON CHECKLIST ON CONTROL COLUMN PLACARD
854.50	855.20	0.70	1P180080 CALL OUT -[LANDING GEAR]
855.20	856.20	1.00	1P180081 CALL OUT -[DOWN, THREE GREEN]
856.20	857.20	1.00	5B090001 READ NEXT ITEM ON CHECKLIST ON CONTROL COLUMN PLACARD
858.20	858.60	0.40	1P180082 CALL OUT -[FLAPS]
858.60	859.70	1.10	1P180083 CALL OUT -[FIFTEEN GREEN LIGHT]
861.10	862.20	1.10	1P180084 CALL OUT -[CHECKLIST COMPLETE]
861.10	862.20	1.10	1P 12 MONITOR CALL-OUT
860.00			00EV21 PILOT EXT VIS SCAN
855.00			180071 FLIGHT INSTRUMENT SCAN -A2, PILOT
865.00			00EV02 C/P EXT VIS SCAN
865.00	875.00	10.00	8A 10 PILOT EXTERNAL VISION SCAN
877.00			180073 FLIGHT INSTRUMENT SCAN -A1, COPILOT
877.00	887.00	10.00	2K 14 MON MAP VIDEO
877.00	887.00	10.00	2K 46 MON STRAIGHT TREND VECTOR SYMBOL
877.00	887.00	10.00	2K 33 MON CURVED TREND VECTOR SYMBOLS
877.00	887.00	10.00	2J 05 MON FLT PATH ANGLE INDIC
877.00	887.00	10.00	2J 04 MON FLT PATH ACCEL INDIC
877.00	887.00	10.00	2J 01 MON ROLL ATT INDIC
877.00	887.00	10.00	2J 10 MON PITCH REF INDIC
877.00	887.00	10.00	3A 10 MONITOR AIRSPEED INDIC
889.00			030007 ENGINE INSTRUMENT SCAN
889.00	889.44	0.44	7F 25 MON ENG NC 1 EPR IND
889.00	889.44	0.44	7F 30 MON ENG NO 2 EPR IND
889.44	889.88	0.44	7F 21 MON NO 1 ENG N1 IND
889.44	889.88	0.44	7F 22 MON NO 2 ENG N1 IND
889.88	890.32	0.44	7F 31 MON ENG NO 1 EXH GAS TEMP IND
889.88	890.32	0.44	7F 32 MON ENG NO 2 EXH GAS TEMP IND
890.32	890.76	0.44	7F 23 MON NO 1 ENG N2 IND
890.32	890.76	0.44	7F 24 MON NO 2 ENG N2 IND
890.76	891.20	0.44	7F 33 MON ENG NO 1 FUEL FLOW INDIC
890.76	891.20	0.44	7F 34 MON ENG NO 2 FUEL FLOW INDIC
891.20	891.64	0.44	7F 08 MON NO 1 ENG OIL PRESS INDIC

SINCE MISSION START BEGINNING	END	ACTIVITY TIME	EVENT/PROCEDURE TASK
891.64	892.08	0.44	7F 10 MON NO 1 ENG OIL TEMP INDIC
891.64	892.08	0.44	7F 18 MON NO 2 ENG OIL TEMP INDIC
892.08	892.52	0.44	7F 11 MON NO 1 ENG OIL QTY INDIC
892.08	892.52	0.44	7F 19 MON NO 2 ENG OIL QTY INDIC
892.52	892.96	0.44	7F 12 MON NO 1 ENG VIBRATION AMPLITUDE INDIC
892.52	892.96	0.44	7F 20 MON NO 2 ENG VIBR AMPLITUDE INDIC
895.00			180071 FLIGHT INSTRUMENT SCAN -A2, PILOT
895.00			180049 MON RADIO ALTIMETER
895.00	897.00	2.00	3J 01 MON RADIO ALT ALTITUDE INDIC
900.00			00EV04 C/P EXT VIS SCAN
900.00	920.00	20.00	8A 10 PILOT EXTERNAL VISION SCAN
923.00			180085 DESCEND THRU -DECISION HEIGTH
923.00	925.50	2.50	3R 12 MON DECISION HGT LT ON FDI
925.50	926.30	0.80	1P180088 CALL OUT -[DECISION HEIGHT]
915.00			00EV21 PILOT EXT VIS SCAN
920.00			180071 FLIGHT INSTRUMENT SCAN -A2, PILOT
925.00			180084 CROSS RWY 08 MIDDLE MARKER
925.00	926.91	1.91	3V 13 MONITOR MIDDLE MARKER ANNUN LT ON AND AUDIBLE SIGNAL
926.00			18BL15 CROSS MIDDLE MARKER
930.00			00EV02 C/P EXT VIS SCAN
930.00	940.00	10.00	8A 10 PILOT EXTERNAL VISION SCAN
940.00			180073 FLIGHT INSTRUMENT SCAN -A1, COPILOT
940.00	950.00	10.00	2K 14 MON MAP VIDEO
940.00	950.00	10.00	2K 46 MON STRAIGHT TREND VECTOR SYMBOL
940.00	950.00	10.00	2K 33 MON CURVED TREND VECTOR SYMBOLS
940.00	950.00	10.00	2J 05 MON FLT PATH ANGLE INDIC
940.00	950.00	10.00	2J 04 MON FLT PATH ACCEL INDIC
940.00	950.00	10.00	2J 01 MON ROLL ATT INDIC
940.00	950.00	10.00	2J 19 MON PITCH REF INDIC
940.00	950.00	10.00	3A 10 MONITOR AIRSPEED INDIC
941.00			18BL16 CROSS RW THRESHOLD
950.00			18BL17 TOUCHDOWN
950.00			180036 TOUCHDOWN AND ROLL-OUT, AGCS AUTO LAND MODE CONTROLS A/C UNTILL 80KTS
950.00	980.00	30.00	2J 15 MON TV VIDEO
950.00	980.00	30.00	2J 40 MON EADI RNWY
950.00	980.00	30.00	2J 41 MON EADI DRIFT INDIC
950.00	980.00	30.00	7F 25 MON ENG NO 1 EPR IND
950.00	980.00	30.00	7F 30 MON ENG NO 2 EPR IND

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SINCE MISSION START        ACTIVITY                    EVENT/PROCEDURE
BEGINNING      END         TIME                          TASK
 980.00                                                180036   TOUCHDOWN AND ROLL-
                                                                OUT.  AGCS AUTO LAND
                                                                MODE CONTROLS A/C
                                                                UNTILL 30KTS
 980.00      1010.00        30.00                         2J     15   MON TV VIDEO
 980.00      1010.00        30.00                         2J     40   MON EADI RNWY
 980.00      1010.00        30.00                         2J     41   MON EADI DRIFT INDIC
 980.00      1010.00        30.00                         7F     25   MON ENG NO 1 EPR IND
 980.00      1010.00        30.00                         7F     30   MON ENG NO 2 EPR IND
1010.00                                                180037   DISENGAGE AGCS
1010.90                                                00EV23   PILOT EXT VIS SCAN
 984.00                                                180071   HANDOFF TO GROUND
                                                                CONTROL -121.9
 984.00       990.00         6.00                         1B     18   MON VHF-2 COMM AUDIO
 984.00       987.50         3.50                         1P180087   MON RADIO COMM -
                                                                     [NASA 515,EXIT RUN-
                                                                     WAY NEXT INTERSEC-
                                                                     TION. CONTACT GROUND
 987.50       990.00         2.50                         1P180088   POINT NINER WHEN
                                                                     CLEAR OF RUNWAY,
                                                                     OVER]
 990.00       992.50         2.50                         1B     14   ACT PUSH-TO-TALK SW
                                                                      ON HANDGRIP
 990.00       992.50         2.50                         1B     15   COMM VIA VHF-2
 990.00       992.50         2.50                         1P180089   RADIO COMM -[515,
                                                                     ROGER. POINT NINER
                                                                     WHEN CLEAR]
 993.00       996.00         3.00                         1B     01   MON VHF-2L FREQ IND
 993.00       995.90         2.90                         1B     02   SET VHF-2L FREQ-
                                                                      WHOLE NO.S
 995.88       997.86         1.98                         1B     03   SET VHF-2L FREQ -
                                                                      FRACTIONS
 998.00       999.45         1.45                         1B     05   SET VHF-2 COMM TFR
                                                                      SW TO LEFT
 999.50      1003.00         3.50                         1B     29   ACTUATE COMM 2 PUSH-
                                                                      TO-TALK SW
 999.50      1003.00         3.50                         1B     15   COMM VIA VHF-2
 999.50      1003.00         3.50                         1P180090   RADIO COMM -[ATLANTA
                                                                     GROUND, THIS IS NASA
                                                                     515. TAXI TO GATE X,
                                                                     OVER]
1004.00      1007.50         3.50                         1B     18   MON VHF-2 COMM AUDIO
1004.00      1007.50         3.50                         1P180091   MON RADIO COMM -
                                                                     [NASA 515, ATLANTA
                                                                     GROUND, TAXI TO RAMP
                                                                     VIA NORTHEAST*SOUTH-
1007.50      1008.50         1.00                         1P180092   WEST TAXIWAY, OVER]
1009.00      1010.70         1.70                         1B     29   ACTUATE COMM 2 PUSH-
                                                                      TO-TALK SW
1009.00      1010.70         1.70                         1B     15   COMM VIA VHF-2
1009.00      1010.70         1.70                         1P180037   RADIO COMM -
                                                                     [515, ROGER]
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****************                ****************************************                NOV10 1986
* UNSHIFTED    *                *                                      *
****************                *       MISSION SCENARIO REPORT        *
                                *                                      *
                                * MISSION - MD-6 DATA LINK             *
                                *           ILS AP-BASE LN.            *
                                *                                      *
                                * CONFIGURATION - 737 ADVCND FLT DCK   *
                                *                                      *
                                * CREWMEMBER - COPILOT                 *
                                *                                      *
                                ****************************************

       TIME INTERVAL (SECS)          TOTAL                                  FLIGHT PHASE
       SINCE MISSION START           ACTIVITY                                   EVENT/PROCEDURE
       BEGINNING      END            TIME                                           TASK

         0.00                                                               18DL DATA LINK AFD ILS AP

         0.00                                                                  18DL01   CROSS LOGEN INTERSEC
                                                                                        TION AT 250 KCAS AND
                                                                                        14000 FEET.ATL CENTR
                                                                                        HAS PREVIOUSLY INSTR
                                                                                        UCTED NASA 515 TO
                                                                                        MONITOR ATL APPROACH
                                                                                        ON 126.9 AT LOGEN.
                                                                                        VHF-2R HAS BEEN SET.

         0.00                                                                  18DL90   MONITOR ATL APPROACH
                                                                                        ON 126.9/VHF-2R

         0.00        1.45               1.45                                      1B     08    SET VHF-2 COMM TFR
                                                                                               SW TO RIGHT

         1.50        3.50               2.00                                      1B     04    ADJ VHF-2  VOLUME

         0.00                                                                  180080   DROP OUT OF HOR
                                                                                        AND VERT PATH TO
                                                                                        FPA,TKA,AND CAS
                                                                                        AUTO FLT MODES
                                                                                        ENTER FPA IN MCP

        10.00                                                                  090048   FLIGHT INSTRUMENT
                                                                                        SCAN -A2

        40.00                                                                  090048   FLIGHT INSTRUMENT
                                                                                        SCAN -A2

        70.00                                                                  090048   FLIGHT INSTRUMENT
                                                                                        SCAN -A2

        15.00                                                                  180013   SET NAV-1 TO RUNWAY
                                                                                        8L ILS -109.3

        15.00       21.00               6.00                                      3B     06    RETREIVE CHARTS

        21.00       26.00               5.00                                      3B180003     REVIEW CHARTS TO
                                                                                             DETERMINE RUNWAY 08
                                                                                             ILS FREQ AND REG VOR
                                                                                             FREQ

        26.00       31.00               5.00                                      5U     01    MON NAV-1 FREQ INDIC

        26.00       29.00               3.00                                      5U     02    SET NAV-1 FREQ -
                                                                                               WHOLE NO.S

        29.00       31.00               2.00                                      5U     03    SET NAV-1 FREQ -
                                                                                               FRACTIONS

        31.50       34.40               2.90                                      1P180068     CALL OUT -[RUNWAY 8L
                                                                                             ILS IS ON NAV 1]

        31.50       33.77               2.27                                      5H     02    MON VOR POINTER NO.1
                                                                                             ON VOR/RMI 2 INDIC

        60.00                                                                  00EV30   PILOT EXT VIS SCAN

        38.00                                                                  180039   SET ADF-1 TO CATTA
                                                                                           -375KC

        38.00       41.00               3.00                                      5D     17    SET ADF NO.1 BFO SW
                                                                                             TO OFF

        41.00       41.77               0.77                                      5D     22    MON ADF NO.1 TUNING
                                                                                             METER INDIC

        41.77       43.75               1.98                                      5D     61    MONITOR ADF NO 1
                                                                                             FREQ INDIC

        43.75       45.73               1.98                                      5D     02    SELECT ADF NO 1 FREQ
                                                                                             INDIC

        45.73       47.23               1.50                                      1P180065     CALL OUT -[CATTA
                                                                                             ON ADF-1]

        49.00                                                                  180040   SET ADF-2 TO FLANC
                                                                                           -344

        49.00       51.00               2.00                                      5E     17    SEL ADF NO.2 FREQ
                                                                                             BAND .19-.40

        52.00       53.98               1.98                                      5E     01    MON ADF NO 2  FREQ.
                                                                                             INDIC

        52.00       53.98               1.98                                      5E     02    SELECT ADF NO 2 FREQ
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ORIGINAL PAGE IS
OF POOR QUALITY

SINCE MISSION START BEGINNING	END	ACTIVITY TIME	EVENT/PROCEDURE TASK
52.00	54.26	2.26	5E 20 MON ADF NO.2 TUNING METER INDIC
54.00	55.50	1.50	1P100066 CALL OUT -[FLANC ON ADF-2]
58.00			100038 SET DECISION HEIGTH ON RADIO ALTIMETER
64.00			030007 ENGINE INSTRUMENT SCAN
64.00	64.44	0.44	7F 29 MON ENG NO 1 EPR IND
64.00	64.44	0.44	7F 30 MON ENG NO 2 EPR IND
64.44	64.88	0.44	7F 21 MON NO 1 ENG N1 IND
64.44	64.88	0.44	7F 22 MON NO 2 ENG N1 IND
64.88	65.32	0.44	7F 31 MON ENG NO 1 EXH GAS TEMP IND
64.88	65.32	0.44	7F 32 MON ENG NO 2 EXH GAS TEMP IND
65.32	65.76	0.44	7F 23 MON NO 1 ENG N2 IND
65.32	65.76	0.44	7F 24 MON NO 2 ENG N2 IND
65.76	66.20	0.44	7F 33 MON ENG NO 1 FUEL FLOW INDIC
65.76	66.20	0.44	7F 34 MON ENG NO 2 FUEL FLOW INDIC
66.20	66.64	0.44	7F 09 MON NO 1 ENG OIL PRESS INDIC
66.64	67.08	0.44	7F 10 MON NO 1 ENG OIL TEMP INDIC
66.64	67.08	0.44	7F 18 MON NO 2 ENG OIL TEMP INDIC
67.08	67.52	0.44	7F 11 MON NO 1 ENG OIL QTY INDIC
67.08	67.52	0.44	7F 19 MON NO 2 ENG OIL QTY INDIC
67.52	67.96	0.44	7F 12 MON NO 1 ENG VIBRATION AMPLITUDE INDIC
67.52	67.96	0.44	7F 20 MON NO 2 ENG VIBR AMPLITUDE INDIC
70.00			100005 DESCENT AND APPROACH CHECKLIST - 1
70.00	72.00	2.00	1P 02 MONITOR CALL-OUT
72.00	77.90	5.90	8B 02 RETREIVE CHECKLIST
78.00	83.00	5.00	8B 05 FIND CHECKLIST IN HANDBOOK
83.00	85.00	2.00	8B 03 READ NEXT ITEM ON CHECKLIST
85.00	86.00	1.00	1P100044 CALL OUT-[ANTI-ICE]
87.00	87.80	0.80	1P100045 CALL OUT-[NOT REQD]
88.00	90.00	2.00	8B 03 READ NEXT ITEM ON CHECKLIST
90.00	91.80	1.80	1P100046 CALL OUT -[AIR CONDITIONING AND PRESSURIZATION]
92.00	94.07	2.07	7D 69 MON PASS CAB TEMP CONT SETTING
94.07	96.09	2.02	7D 70 MON CONT CAB TEMP CONT SETTING
96.09	97.26	1.17	7E 08 MON LDG ALT CNTR
98.00	98.40	0.40	1P100047 CALL OUT [SET]
100.00			100006 DESCENT AND APPROACH CHECKLIST - 2
100.00	102.00	2.00	8B 03 READ NEXT ITEM ON CHECKLIST
102.00	102.90	0.90	1P100048 CALL OUT-[START SWITCHES]
108.50	109.00	0.50	1P 06 MONITOR REPORT

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SINCE MISSION START BEGINNING	END	ACTIVITY TIME	EVENT/PROCEDURE TASK
109.00	111.00	2.00	8B 03 READ NEXT ITEM ON CHECKLIST
111.00	112.10	1.10	1P180050 CALL OUT-[INBOARD LANDING LIGHTS]
112.00	114.20	2.20	7G 17 SET LANDING LIGHTS SW TO ON
114.20	114.50	0.30	1P180051 CALL OUT -[ON]
114.50	116.50	2.00	8B 03 READ NEXT ITEM ON CHECKLIST
116.50	117.90	1.40	1P180052 CALL OUT -[ALTIMETER AND INSTRUMENTS]
118.00	120.37	2.37	3H 02 MON CORR BARO ALT INDIC
120.37	123.37	3.00	3H 06 F.O. CHECK CAPT<S ALTIMETER BARO SET AND INDICATED ALTITUDE
123.40	124.70	1.30	1P180053 CALL OUT-[SET AND CROSSCHECKED]
126.00			180007 DESCENT AND APPROACH CHECKLIST - 3
126.00	128.00	2.00	8B 03 READ NEXT ITEM ON CHECKLIST
128.00	129.50	1.50	1P180054 CALL OUT-[EPR AND IAS BUGS]
128.00	131.00	3.00	8B010004 RETREIVE FLIGHT PLANNING REF. DATA MANUAL
131.00	136.00	5.00	8B180001 DETERMINE GO-AROUND EPR BUG SET VALUE
136.00	138.32	2.32	7F 26 SET ENG NO 1 EPR BUG
136.32	138.32	2.00	7F 27 MON ENG NO 1 EPR BUG
138.32	140.64	2.32	7F 28 SET ENG NO 2 EPR BUG
138.64	140.64	2.00	7F 29 MON ENG NO 2 EPR BUG
141.00	146.00	5.00	8B180002 DETERMINE LANDING V-REF BUG SET VALUE
146.00	148.57	2.57	3A 07 MON V-REF BUG SETTING
146.00	148.57	2.57	3A 05 SET V-REF BUG
146.00	147.90	1.90	1P180055 CALL OUT -[V-REF IS XXX KNOTS]
151.00	154.00	3.00	3A 12 F.O. CHECK CAPTIS V-REF BUG SETTING
154.00	155.60	1.60	1P180056 CALL OUT -[BUGS SET AND CROSS-CHECKED]
155.60	157.60	2.00	8B 03 READ NEXT ITEM ON CHECKLIST
155.60	156.90	1.30	1P180057 CALL OUT -[CHECKLIST COMPLETED]
157.60	160.60	3.00	8B 08 STOW CHECKLIST
160.60	162.60	2.00	8B010005 STOW FLIGHT PLANNING REF. DATA MANUAL
165.00			030007 ENGINE INSTRUMENT SCAN
165.00	165.44	0.44	7F 25 MON ENG NO 1 EPR IND
165.00	165.44	0.44	7F 30 MON ENG NO 2 EPR IND
165.44	165.88	0.44	7F 21 MON NO 1 ENG N1 IND
165.44	165.88	0.44	7F 22 MON NO 2 ENG N1 IND
165.88	166.32	0.44	7F 31 MON ENG NO 1 EXH GAS TEMP IND
165.88	166.32	0.44	7F 32 MON ENG NO 2 EXH GAS TEMP IND
166.32	166.76	0.44	7F 23 MON NO 1 ENG N2 IND
166.32	166.76	0.44	7F 24 MON NO 2 ENG N2 IND
166.76	167.20	0.44	7F 33 MON ENG NO 1 FUEL FLOW INDIC

SINCE MISSION START		ACTIVITY TIME	EVENT/PROCEDURE TASK
BEGINNING	END		
186.76	187.20	0.44	7F 34 MON ENG NO 2 FUEL FLOW INDIC
187.20	187.64	0.44	7F 09 MON NO 1 ENG OIL PRESS INDIC
187.64	188.08	0.44	7F 10 MON NO 1 ENG OIL TEMP INDIC
187.64	188.08	0.44	7F 18 MON NO 2 ENG OIL TEMP INDIC
188.08	188.52	0.44	7F 11 MON NO 1 ENG OIL QTY INDIC
188.08	188.52	0.44	7F 19 MON NO 2 ENG OIL QTY INDIC
188.52	188.96	0.44	7F 12 MON NO 1 ENG VIBRATION AMPLITUDE INDIC
188.52	188.96	0.44	7F 20 MON NO 2 ENG VIBR AMPLITUDE INDIC
150.00			00EV05 C/P EXT VIS SCAN
150.00	175.00	25.00	8A 11 PILOT EXTERNAL VISION SCAN
196.00			090051 FLIGHT INSTRUMENT SCAN -A1
195.00			160048 MON ADF/RMI-2
195.00	197.20	2.20	8E 26 MON ADF NO.1 POINTER ON ADF/RMI 2 INDIC
195.00			16DL01 HANDOFF TO ATL FINAL APPROACH CONTROLLER VECTOR TO DOWNWIND
195.00	196.60	1.60	1D16XX01 MON INFORMATION MANAGEMENT ATENSON
196.60	198.60	2.00	1D16XX02 MON INFORMATION MANAGEMENT DISPLAY (MODE-S UPLINK PNDG) AMBER
198.60	200.40	1.80	1X160001 LINE SELECT (ATC UPLINKS PENDING)
200.40	210.40	10.00	1D16XX01 READ -TURN RT HDG 270,DESCND AND MAINTAIN 6000 FT,MONITOR ATL APPR ON 127.25
210.40	212.20	1.80	1X160041 LINE SELECT (WILCO)
200.00			16DL01 ARM NEW DL MCP ALT
200.00			16DL02 BEGIN TURN TO DOWNWIND LEG
205.00			16DL02 ENGAGE DATA LINKED HEADING IN MCP
210.00			16DL03 DESCEND THRU 11000.
210.00			090051 FLIGHT INSTRUMENT SCAN -A1
219.00			160092 TUNE ATL APPROACH ON 127.25
219.00	223.88	4.88	1B 01 MON VHF-2L FREQ IND
219.00	221.90	2.90	1B 02 SET VHF-2L FREQ-WHOLE NO.S
221.90	223.88	1.98	1B 03 SET VHF-2L FREQ - FRACTIONS
226.00			16DL93 MONITOR ATL APPROACH ON 127.25/VHF-2L
226.00	227.40	1.40	1B 05 SET VHF-2 COMM TFR SW TO LEFT
227.60	229.60	2.00	1B 04 ADJ VHF-2 VOLUME
229.00			090048 FLIGHT INSTRUMENT SCAN -A2
240.00			00EV09 C/P EXT VIS SCAN
240.00	285.00	45.00	8A 12 PILOT EXTERNAL VISION SCAN
250.00			090048 FLIGHT INSTRUMENT SCAN -A2
260.00			090048 FLIGHT INSTRUMENT SCAN -A2

SINCE MISSION START BEGINNING	END	ACTIVITY TIME	EVENT/PROCEDURE TASK		
310.00			090048		FLIGHT INSTRUMENT SCAN -A2
340.00			090048		FLIGHT INSTRUMENT SCAN -A2
288.00			030007		ENGINE INSTRUMENT SCAN
288.00	288.44	0.44	7F	29	MON ENG NO 1 EPR IND
288.00	288.44	0.44	7F	30	MON ENG NO 2 EPR IND
288.44	288.88	0.44	7F	21	MON NO 1 ENG N1 IND
288.44	288.88	0.44	7F	22	MON NO 2 ENG N1 IND
288.88	289.32	0.44	7F	31	MON ENG NO 1 EXH GAS TEMP IND
288.88	289.32	0.44	7F	32	MON ENG NO 2 EXH GAS TEMP IND
289.32	289.76	0.44	7F	23	MON NO 1 ENG N2 IND
289.32	289.76	0.44	7F	24	MON NO 2 ENG N2 IND
289.76	290.20	0.44	7F	33	MON ENG NO 1 FUEL FLOW INDIC
289.76	290.20	0.44	7F	34	MON ENG NO 2 FUEL FLOW INDIC
290.20	290.64	0.44	7F	09	MON NO 1 ENG OIL PRESS INDIC
290.64	291.08	0.44	7F	10	MON NO 1 ENG OIL TEMP INDIC
290.64	291.08	0.44	7F	18	MON NO 2 ENG OIL TEMP INDIC
291.08	291.52	0.44	7F	11	MON NO 1 ENG OIL QTY INDIC
291.08	291.52	0.44	7F	19	MON NO 2 ENG OIL QTY INDIC
291.52	291.96	0.44	7F	12	MON NO 1 ENG VIBRATION AMPLITUDE INDIC
291.52	291.96	0.44	7F	20	MON NO 2 ENG VIBR AMPLITUDE INDIC
295.00			00EV09		C/P EXT VIS SCAN
295.00	340.00	45.00	8A	12	PILOT EXTERNAL VISION SCAN
340.00			00EV04		C/P EXT VIS SCAN
340.00	360.00	20.00	8A	10	PILOT EXTERNAL VISION SCAN
363.00			030007		ENGINE INSTRUMENT SCAN
363.00	363.44	0.44	7F	29	MON ENG NO 1 EPR IND
363.00	363.44	0.44	7F	30	MON ENG NO 2 EPR IND
363.44	363.88	0.44	7F	21	MON NO 1 ENG N1 IND
363.44	363.88	0.44	7F	22	MON NO 2 ENG N1 IND
363.88	364.32	0.44	7F	31	MON ENG NO 1 EXH GAS TEMP IND
363.88	364.32	0.44	7F	32	MON ENG NO 2 EXH GAS TEMP IND
364.32	364.76	0.44	7F	23	MON NO 1 ENG N2 IND
364.32	364.76	0.44	7F	24	MON NO 2 ENG N2 IND
364.76	365.20	0.44	7F	33	MON ENG NO 1 FUEL FLOW INDIC
364.76	365.20	0.44	7F	34	MON ENG NO 2 FUEL FLOW INDIC
365.20	365.64	0.44	7F	09	MON NO 1 ENG OIL PRESS INDIC
365.64	366.08	0.44	7F	10	MON NO 1 ENG OIL TEMP INDIC
365.64	366.08	0.44	7F	18	MON NO 2 ENG OIL TEMP INDIC
366.08	366.52	0.44	7F	11	MON NO 1 ENG OIL QTY INDIC

SINCE MISSION START BEGINNING	END	ACTIVITY TIME	EVENT/PROCEDURE TASK
368.08	368.52	0.44	7F 19 MON NO 2 ENG OIL QTY INDIC
368.52	368.96	0.44	7F 12 MON NO 1 ENG VIBRATION AMPLITUDE INDIC
368.52	368.96	0.44	7F 20 MON NO 2 ENG VIBR AMPLITUDE INDIC
370.00			16BL04 DESCEND THRU 8600.
370.00			16DL04 ALTITUDE STEP DOWN
370.00	371.80	1.80	1D16XX01 MON INFORMATION MANAGEMENT ATENSON
371.80	373.80	2.00	1D16XX02 MON INFORMATION MANAGEMENT DISPLAY [MODE-S UPLINK PNDG] AMBER
373.80	375.40	1.80	1X160001 LINE SELECT [ATC UPLINKS PENDING]
375.40	379.40	4.00	1D16XX04 READ -DESCEND AND MAINTAIN 6000 FT
379.40	381.20	1.80	1X160041 LINE SELECT [WILCO]
375.00			16DL81 ARM NEW DL MCP ALT
385.00			090048 FLIGHT INSTRUMENT SCAN -A2
415.00			090049 FLIGHT INSTRUMENT SCAN -A2
445.00			090049 FLIGHT INSTRUMENT SCAN -A2
475.00			090048 FLIGHT INSTRUMENT SCAN -A2
505.00			090051 FLIGHT INSTRUMENT SCAN -A1
385.00			00EV08 C/P EXT VIS SCAN
385.00	425.00	40.00	6A 11 PILOT EXTERNAL VISION SCAN
430.00			030007 ENGINE INSTAUMENT SCAN
430.00	430.44	0.44	7F 25 MON ENG NO 1 EPR IND
430.00	430.44	0.44	7F 30 MON ENG NO 2 EPR IND
430.44	430.88	0.44	7F 21 MON NO 1 ENG N1 IND
430.44	430.88	0.44	7F 22 MON NO 2 ENG N1 IND
430.88	431.32	0.44	7F 31 MON ENG NO 1 EXH GAS TEMP IND
430.88	431.32	0.44	7F 32 MON ENG NO 2 EXH GAS TEMP IND
431.32	431.76	0.44	7F 23 MON NO 1 ENG N2 IND
431.32	431.76	0.44	7F 24 MON NO 2 ENG N2 IND
431.76	432.20	0.44	7F 33 MON ENG NO 1 FUEL FLOW INDIC
431.76	432.20	0.44	7F 34 MON ENG NO 2 FUEL FLOW INDIC
432.20	432.64	0.44	7F 09 MON NO 1 ENG OIL PRESS INDIC
432.64	433.08	0.44	7F 10 MON NO 1 ENG OIL TEMP INDIC
432.64	433.08	0.44	7F 18 MON NO 2 ENG OIL TEMP INDIC
433.08	433.52	0.44	7F 11 MON NO 1 ENG OIL QTY INDIC
433.08	433.52	0.44	7F 19 MON NO 2 ENG OIL QTY INDIC
433.52	433.96	0.44	7F 12 MON NO 1 ENG VIBRATION AMPLITUDE INDIC
433.52	433.96	0.44	7F 20 MON NO 2 ENG VIBR AMPLITUDE INDIC

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SINCE MISSION START BEGINNING	END	ACTIVITY TIME	EVENT/PROCEDURE TASK
450.00			16DL02 RECEIVE ATL ETIS TERMINAL INFORMATION
450.00	451.80	1.80	1X160004 LINE SELECT [ETIS REQUESTS]
451.80	453.80	2.00	1D16XX33 READ [ETIS REQUEST FOR KATL]
453.80	455.60	1.80	1X160046 LINE SELECT [FULL ETIS REPORT]
458.60	460.20	1.60	1D16XX01 MON INFORMATION MANAGEMENT ATENSON
460.20	462.20	2.00	1D16XX08 MON VISUAL ALERT DSP [MODE-S UPLINK PNDG] INDENTED BLUE
462.20	464.00	1.80	1X160001 LINE SELECT [ATC UPLINKS PENDING]
464.00	474.00	10.00	1D16XX31 READ-ETIS REPORT FOR ATL AT XXXXZ. SKY 25 SCT/40 BKN. VSB 10. WIND 110/10/G17.
474.00	479.00	5.00	1D16XX32 TEMP 59. ALT 2984. APR RW08L AND RW09R SIMULT PARALLEL ILS
479.00	480.80	1.80	1X160047 LINE SELECT [PRINT MESSAGE]
480.00			16BL05 CROSS FT NDB
480.00			160003 SET ALTIMETER BARO SETTING TO 29.84
480.00	482.00	2.00	1P160043 CALL OUT-[DESCENT AND APPROACH CHECK-LIST]
484.00			140032 ALTIMETER BARO SET PROC.
484.00	486.85	2.85	3H 04 MONITOR ALTIMETER BARO SETTING INDIC
484.00	486.85	2.85	3H 03 SET ALTIMETER BARO SETTING CONTROL
513.00			030007 ENGINE INSTRUMENT SCAN
513.00	513.44	0.44	7F 25 MON ENG NO 1 EPR IND
513.00	513.44	0.44	7F 30 MON ENG NO 2 EPR IND
513.44	513.88	0.44	7F 21 MON NO 1 ENG N1 IND
513.44	513.88	0.44	7F 22 MON NO 2 ENG N1 IND
513.88	514.32	0.44	7F 31 MON ENG NO 1 EXH GAS TEMP IND
513.88	514.32	0.44	7F 32 MON ENG NO 2 EXH GAS TEMP IND
514.32	514.76	0.44	7F 23 MON NO 1 ENG N2 IND
514.32	514.76	0.44	7F 24 MON NO 2 ENG N2 IND
514.76	515.20	0.44	7F 33 MON ENG NO 1 FUEL FLOW INDIC
514.76	515.20	0.44	7F 34 MON ENG NO 2 FUEL FLOW INDIC
515.20	515.64	0.44	7F 09 MON NO 1 ENG OIL PRESS INDIC
515.64	516.08	0.44	7F 10 MON NO 1 ENG OIL TEMP INDIC
515.64	516.08	0.44	7F 18 MON NO 2 ENG OIL TEMP INDIC
516.08	516.52	0.44	7F 11 MON NO 1 ENG OIL QTY INDIC
516.08	516.52	0.44	7F 19 MON NO 2 ENG OIL QTY INDIC
516.52	516.96	0.44	7F 12 MON NO 1 ENG VIBRA-TION AMPLITUDE INDIC
516.52	516.96	0.44	7F 20 MON NO 2 ENG VIBR AMPLITUDE INDIC
519.00			160041 MON VOR/RMI-1
520.00			16DL03 VECTOR FOR BASE LEG

SINCE MISSION START BEGINNING	END	ACTIVITY TIME	EVENT/PROCEDURE TASK
520.00	521.80	1.80	1D16XX01 MON INFORMATION MANAGEMENT ATENSON
521.80	523.80	2.00	1D16XX02 MON INFORMATION MANAGEMENT DISPLAY [MODE-S UPLINK PNDG] AMBER
523.80	525.40	1.60	1X160001 LINE SELECT [ATC UPLINKS PENDING]
525.40	528.40	3.00	1D16XX55 READ -TURN LEFT HEADING 180
528.40	530.20	1.80	1X160041 LINE SELECT [WILCO]
523.00			16DL92 ENGAGE DATA LINKED HEADING IN MCP
523.00			16BL06 BEGIN TURN TO BASE
540.00			140023 REPORT 1000 FT TO LEVEL OFF
540.00	542.13	2.13	3H 02 MON CORR BARO ALT INDIC
542.00	543.70	1.70	1P140045 CALL OUT -[1000 FEET TO LEVEL OFF]
550.00			00EV03 C/P EXT VIS SCAN
550.00	565.00	15.00	5A 10 PILOT EXTERNAL VISION SCAN
555.00			090051 FLIGHT INSTRUMENT SCAN -A1
565.00			160041 MON VOR/RMI-1
569.00			160042 MON ADF/RMI-1
570.00			16DL96 VECTOR TO FINAL APPR
570.00	571.60	1.60	1D16XX01 MON INFORMATION MANAGEMENT ATENSON
571.60	573.60	2.00	1D16XX02 MON INFORMATION MANAGEMENT DISPLAY [MODE-S UPLINK PNDG] AMBER
573.60	575.40	1.80	1X160001 LINE SELECT [ATC UPLINKS PENDING]
575.40	584.40	9.00	1D16XX96 READ -12 NM FROM OM TURN LT HDG 110.MAINTAIN 6000 UNTIL XING BAHRR.
584.40	591.40	7.00	1D16ZZ97 CLEARED FOR ILS 8L APPR.MONITOR TOWER ON 119.5 AT BAHRR
591.40	593.20	1.80	1X160041 LINE SELECT [WILCO]
575.00			16DL32 ENGAGE DATA LINKED HEADING IN MCP
575.00			16BL07 TURN TO INTERCEPT FINAL APPR. COURSE
585.00			160083 ARM LAND MODE
597.00			160034 TUNE ATLANTA TOWER -119.5
597.00	601.88	4.88	1B 07 MON VHF-2R FREQ IND
597.00	599.88	2.88	1B 08 SET VHF-2R FREQ -WHOLE NO.S
599.88	601.86	1.98	1B 09 SET VHF-2R FREQ -FRACTIONS
600.00			160070 FLIGHT INSTRUMENT SCAN -A1, PILOT
607.00			160073 FLIGHT INSTRUMENT SCAN -A1, COPILOT
607.00	617.00	10.00	2K 14 MON MAP VIDEO
607.00	617.00	10.00	2K 46 MON STRAIGHT TREND VECTOR SYMBOL
607.00	617.00	10.00	2K 33 MON CURVED TREND VECTOR SYMBOLS

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SINCE MISSION START BEGINNING	END	ACTIVITY TIME	EVENT/PROCEDURE TASK
607.00	617.00	10.00	2J 05 MON FLT PATH ANGLE INDIC
607.00	617.00	10.00	2J 04 MON FLT PATH ACCEL INDIC
607.00	617.00	10.00	2J 01 MON ROLL ATT INDIC
607.00	617.00	10.00	2J 19 MON PITCH REF INDIC
607.00	617.00	10.00	3A 10 MONITOR AIRSPEED INDIC
610.00			180084 CAPTURE AN ALT IN ALT SEL MODE
610.00			18BL08 LEVEL OFF AT 3000 FT BEGIN DECEL FROM 230 TO 210 KCAS
617.00			180073 FLIGHT INSTRUMENT SCAN -A1, COPILOT
617.00	627.00	10.00	2K 14 MON MAP VIDEO
617.00	627.00	10.00	2K 46 MON STRAIGHT TREND VECTOR SYMBOL
617.00	627.00	10.00	2K 33 MON CURVED TREND VECTOR SYMBOLS
617.00	627.00	10.00	2J 05 MON FLT PATH ANGLE INDIC
617.00	627.00	10.00	2J 04 MON FLT PATH ACCEL INDIC
617.00	627.00	10.00	2J 01 MON ROLL ATT INDIC
617.00	627.00	10.00	2J 19 MON PITCH REF INDIC
617.00	627.00	10.00	3A 10 MONITOR AIRSPEED INDIC
613.00			180085 ENTER NEW SPEED IN CAS WINDOW
623.00			180086 CAPTURE LOCALIZER
623.00	625.19	2.19	2J 13 MON ILS BOX INDIC
625.00	626.30	1.30	1P180087 CALL OUT -[LOCALIZER ALIVE]
626.00			180071 FLIGHT INSTRUMENT SCAN -A2, PILOT
627.00			180073 FLIGHT INSTRUMENT SCAN -A1, COPILOT
627.00	637.00	10.00	2K 14 MON MAP VIDEO
627.00	637.00	10.00	2K 46 MON STRAIGHT TREND VECTOR SYMBOL
627.00	637.00	10.00	2K 33 MON CURVED TREND VECTOR SYMBOLS
627.00	637.00	10.00	2J 05 MON FLT PATH ANGLE INDIC
627.00	637.00	10.00	2J 04 MON FLT PATH ACCEL INDIC
627.00	637.00	10.00	2J 01 MON ROLL ATT INDIC
627.00	637.00	10.00	2J 19 MON PITCH REF INDIC
627.00	637.00	10.00	3A 10 MONITOR AIRSPEED INDIC
637.00			180073 FLIGHT INSTRUMENT SCAN -A1, COPILOT
637.00	647.00	10.00	2K 14 MON MAP VIDEO
637.00	647.00	10.00	2K 46 MON STRAIGHT TREND VECTOR SYMBOL
637.00	647.00	10.00	2K 33 MON CURVED TREND VECTOR SYMBOLS
637.00	647.00	10.00	2J 05 MON FLT PATH ANGLE INDIC
637.00	647.00	10.00	2J 04 MON FLT PATH ACCEL INDIC
637.00	647.00	10.00	2J 01 MON ROLL ATT INDIC
637.00	647.00	10.00	2J 19 MON PITCH REF INDIC

SINCE MISSION START BEGINNING	END	ACTIVITY TIME	EVENT/PROCEDURE TASK
837.00	847.00	10.00	3A 10 MONITOR AIRSPEED INDIC
843.50			180045 ANNUNCIATOR RECALL
843.00	845.28	2.28	7A 28 ACTUATE ANNUN PNL RECALL SW
845.28	845.81	0.53	7A 30 MON ALL ANNUN LTS
847.00			180073 FLIGHT INSTRUMENT SCAN -A1, COPILOT
847.00	857.00	10.00	2K 14 MON MAP VIDEO
847.00	857.00	10.00	2K 46 MON STRAIGHT TREND VECTOR SYMBOL
847.00	857.00	10.00	2K 33 MON CURVED TREND VECTOR SYMBOLS
847.00	857.00	10.00	2J 05 MON FLT PATH ANGLE INDIC
847.00	857.00	10.00	2J 04 MON FLT PATH ACCEL INDIC
847.00	857.00	10.00	2J 01 MON ROLL ATT INDIC
847.00	857.00	10.00	2J 19 MON PITCH REF INDIC
847.00	857.00	10.00	3A 10 MONITOR AIRSPEED INDIC
855.00			180041 MON VOR/RMI-1
857.00			180042 MON ADF/RMI-1
857.00			180043 MON ADF/RMI-2
857.00	859.26	2.26	5E 28 MON ADF NO.1 POINTER ON ADF/RMI 2 INDIC
860.00			18BL09 REACH 210 KCAS
860.00			180087 CAPTURE GLIDE SLOPE
864.00			18DL60 MONITOR ATL TOWER ON 119.5/VHF-2R
864.00	865.45	1.45	1B 06 SET VHF-2 COMM TFR SW TO RIGHT
865.50	867.50	2.00	1B 01 ADJ VHF-2 VOLUME
870.00			18DL61 LANDING CLEARANCE
870.00	871.60	1.60	1D18XX01 MON INFORMATION MANAGEMENT ATENSON
871.60	873.60	2.00	1D18XX02 MON INFORMATION MANAGEMENT DISPLAY [MODE-S UPLINK PNDG] AMBER
873.60	875.40	1.80	1X180001 LINE SELECT [ATC UPLINKS PENDING]
875.40	885.40	10.00	1D18XX40 READ -NO.3 FOR 9L. DC-9 3 NM AHEAD.WIND 110 AT 9. CLEARED TO LAND RW 9L.
885.40	887.20	1.80	1X180041 LINE SELECT [WILCO]
894.00			18PL10 CROSS BANRR
894.00			180011 SET FLAPS TO FLAPS 1
894.00	894.70	0.70	1P 10 MONITOR CALL-OUT
895.00	897.69	2.69	4E 07 SET FLAP CONT LEVER TO FLAPS 1
897.69	899.92	2.23	4E 15 MONITOR FLAP POSITION INDICATOR
899.92	901.09	1.17	4N 03 MON LE FLAPS-IN-TRANSIT LT ON
901.09	902.26	1.17	4N 04 MON LE FLAPS-IN-TRANSIT LT OFF
902.26	902.96	0.70	1P180058 CALL OUT -[FLAPS 1]
870.00			180071 FLIGHT INSTRUMENT SCAN -A2, PILOT
885.00			18BL11 REACH 190 KCAS

SINCE MISSION START		ACTIVITY	EVENT/PROCEDURE
BEGINNING	END	TIME	TASK
694.00			180017 SET FLAPS TO FLAPS 5
695.00	697.69	2.69	4E 09 SET FLAP CONT LEVER TO FLAPS 5
699.00	699.70	0.70	1P180081 CALL OUT -[FLAPS 5]
694.00			180016 FLAP SET PROCEDURE
694.00	694.70	0.70	1P 19 MONITOR CALL-OUT
696.69	698.92	2.23	4E 15 MONITOR FLAP POSITION INDICATOR
698.71	701.21	2.50	4E 19 CHECK FLAP LEVER AND POSITION INDIC AGREE
697.69	698.86	1.17	4N 03 MON LE FLAPS-IN-TRANSIT LT ON
698.86	700.03	1.17	4N 04 MON LE FLAPS-IN-TRANSIT LT OFF
699.00			030007 ENGINE INSTRUMENT SCAN
699.00	699.44	0.44	7F 29 MON ENG NO 1 EPR IND
699.00	399.44	0.44	7F 30 MON ENG NO 2 EPR IND
699.44	699.88	0.44	7F 21 MON NO 1 ENG N1 IND
699.44	699.88	0.44	7F 22 MON NO 2 ENG N1 IND
699.88	700.32	0.44	7F 31 MON ENG NO 1 EXH GAS TEMP IND
699.88	700.32	0.44	7F 32 MON ENG NO 2 EXH GAS TEMP IND
700.32	700.76	0.44	7F 23 MON NO 1 ENG N2 IND
700.32	700.76	0.44	7F 24 MON NO 2 ENG N2 IND
700.76	701.20	0.44	7F 33 MON ENG NO 1 FUEL FLOW INDIC
700.76	701.20	0.44	7F 34 MON ENG NO 2 FUEL FLOW INDIC
701.20	701.64	0.44	7F 09 MON NO 1 ENG OIL PRESS INDIC
701.64	702.08	0.44	7F 10 MON NO 1 ENG OIL TEMP INDIC
701.64	702.08	0.44	7F 18 MON NO 2 ENG OIL TEMP INDIC
702.08	702.52	0.44	7F 11 MON NO 1 ENG OIL QTY INDIC
702.08	702.52	0.44	7F 19 MON NO 2 ENG OIL QTY INDIC
702.52	702.96	0.44	7F 12 MON NO 1 ENG VIBRATION AMPLITUDE INDIC
702.52	702.96	0.44	7F 20 MON NO 2 ENG VIBR AMPLITUDE INDIC
700.60			180071 FLIGHT INSTRUMENT SCAN -A2, PILOT
706.00			18BL12 REACH 170 KCAS
710.00			180073 FLIGHT INSTRUMENT SCAN -A1, COPILOT
710.00	720.00	10.00	2K 14 MON MAP VIDEO
710.00	720.00	10.00	2K 46 MON STRAIGHT TREND VECTOR SYMBOL
710.00	720.00	10.00	2K 33 MON CURVED TREND VECTOR SYMBOLS
710.00	720.00	10.00	2J 05 MON FLT PATH ANGLE INDIC
710.00	720.00	10.00	2J 04 MON FLT PATH ACCEL INDIC
710.00	720.00	10.00	2J 01 MON ROLL ATT INDIC
710.00	720.00	10.00	2J 19 MON PITCH REF INDIC
710.00	720.00	10.00	3A 10 MONITOR AIRSPEED INDIC
720.00			180073 FLIGHT INSTRUMENT SCAN -A1, COPILOT

SINCE MISSION START BEGINNING	END	ACTIVITY TIME	EVENT/PROCEDURE TASK		
720.00	730.00	10.00	2K	14	MON MAP VIDEO
720.00	730.00	10.00	2K	46	MON STRAIGHT TREND VECTOR SYMBOL
720.00	730.00	10.00	2K	33	MON CURVED TREND VECTOR SYMBOLS
720.00	730.00	10.00	2J	05	MON FLT PATH ANGLE INDIC
720.00	730.00	10.00	2J	04	MON FLT PATH ACCEL INDIC
720.00	730.00	10.00	2J	01	MON ROLL ATT INDIC
720.00	730.00	10.00	2J	19	MON PITCH REF INDIC
720.00	730.00	10.00	3A	10	MONITOR AIRSPEED INDIC
730.00			180073		FLIGHT INSTRUMENT SCAN -A1, COPILOT
730.00	740.00	10.00	2K	14	MON MAP VIDEO
730.00	740.00	10.00	2K	46	MON STRAIGHT TREND VECTOR SYMBOL
730.00	740.00	10.00	2K	33	MON CURVED TREND VECTOR SYMBOLS
730.00	740.00	10.00	2J	05	MON FLT PATH ANGLE INDIC
730.00	740.00	10.00	2J	04	MON FLT PATH ACCEL INDIC
730.00	740.00	10.00	2J	01	MON ROLL ATT INDIC
730.00	740.00	10.00	2J	19	MON PITCH REF INDIC
730.00	740.00	10.00	3A	10	MONITOR AIRSPEED INDIC
730.00			00EV21		PILOT EXT VIS SCAN
740.00			180069		SET SPEED BRAKES
744.00			180048		MON ADF/RMI-2
744.00	746.26	2.26	5E	26	MON ADF NO.1 POINTER ON ADF/RMI 2 INDIC
746.00			180071		FLIGHT INSTRUMENT SCAN -A2, PILOT
745.00			18BL13		CROSS REIFF
748.00			180070		SET AUTO BRAKES
748.00	750.62	2.62	4D	43	SET AUTO BRAKE SEL SW TO MED
750.62	750.88	0.26	4D	49	MON AUTO BRAKE INOP LT OFF
755.00			00EV01		C/P EXT VIS SCAN
755.00	760.00	5.00	8A	10	PILOT EXTERNAL VISION SCAN
765.00			180073		FLIGHT INSTRUMENT SCAN -A1, COPILOT
765.00	775.00	10.00	2K	14	MON MAP VIDEO
765.00	775.00	10.00	2K	46	MON STRAIGHT TREND VECTOR SYMBOL
765.00	775.00	10.00	2K	33	MON CURVED TREND VECTOR SYMBOLS
765.00	775.00	10.00	2J	05	MON FLT PATH ANGLE INDIC
765.00	775.00	10.00	2J	04	MON FLT PATH ACCEL INDIC
765.00	775.00	10.00	2J	01	MON ROLL ATT INDIC
765.00	775.00	10.00	2J	19	MON PITCH REF INDIC
765.00	775.00	10.00	3A	10	MONITOR AIRSPEED INDIC
775.00			180073		FLIGHT INSTRUMENT SCAN -A1, COPILOT
775.00	785.00	10.00	2K	14	MON MAP VIDEO
775.00	785.00	10.00	2K	46	MON STRAIGHT TREND VECTOR SYMBOL

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SINCE MISSION START        ACTIVITY                              EVENT/PROCEDURE
BEGINNING      END         TIME                                      TASK
775.00       785.00         10.00                                   2K    33   MON CURVED TREND
                                                                          VECTOR SYMBOLS

775.00       785.00         10.00                                   2J    05   MON FLT PATH ANGLE
                                                                          INDIC

775.00       785.00         10.00                                   2J    04   MON FLT PATH ACCEL
                                                                          INDIC

775.00       785.00         10.00                                   2J    01   MON ROLL ATT INDIC
775.00       785.00         10.00                                   2J    10   MON PITCH REF INDIC
775.00       785.00         10.00                                   3A    10   MONITOR AIRSPEED
                                                                          INDIC

775.00                                                          100071   FLIGHT INSTRUMENT
                                                                         SCAN -A2, PILOT

800.00                                                          100058   REPORT RUNWAY IN
                                                                         SIGHT

800.00       802.00          2.00                                   3A    01   VIEW RUNWAY AHEAD
802.00       803.00          1.00                                   1P100074   CALL OUT -[RUNWAY IN
                                                                          SITE]

805.00                                                          00EV21   PILOT EXT VIS SCAN
808.00                                                          100018   FLAP SET PROCEDURE
808.00       808.70          0.70                                   1P    10   MONITOR CALL-OUT
810.69       812.92          2.23                                   4E    15   MONITOR FLAP
                                                                          POSITION INDICATOR

812.71       815.21          2.50                                   4E    16   CHECK FLAP LEVER AND
                                                                          POSITION INDIC AGREE

811.69       812.86          1.17                                   4H    03   MON LE FLAPS-IN-
                                                                          TRANSIT LT ON

812.86       814.03          1.17                                   4H    04   MON LE FLAPS-IN-
                                                                          TRANSIT LT OFF

808.00                                                          100025   SET FLAPS TO FLAPS
                                                                         15

809.00       811.40          2.40                                   4E    11   SET FLAP CONT LEVER
                                                                          TO FLAPS 15

813.00       813.70          0.70                                   1P100082   CALL OUT -[FLAPS 15]
812.00                                                          100042   MON ADF/RMI-1
815.00                                                          100059   CROSS RWY 08 OUTER
                                                                         MARKER

815.00       815.72          0.72                                   3V    11   MONITOR OUTER MARKER
                                                                          LT ON AND AUDIBLE
                                                                          SIGNAL

817.00       818.00          1.00                                   1P    13   MONITOR CALL-OUT
815.00                                                          100L14   CROSS CATTA LOW-GEAR
                                                                         THEN EXTENDED AND
                                                                         155 KCAS MAINTAINED

815.00                                                          100049   MON RADIO ALTIMETER
815.00       817.00          2.00                                   3J    01   MON RADIO ALT
                                                                          ALTITUDE INDIC

820.00                                                          100060   EXTEND LANDING GEAR
820.00       823.27          3.27                                   4D    03   SET LANDING GEAR
                                                                          LEVER TO DOWN
                                                                          POSITION

823.00       823.54          0.54                                   4D    05   MONITOR NOSE GEAR
                                                                          DOWN AND LOCKED LT
                                                                          ON

823.50       824.04          0.54                                   4D    09   MONITOR LEFT/RT GEAR
                                                                          DOWN AND LOCKED LT
                                                                          ON

820.00                                                          100071   FLIGHT INSTRUMENT
                                                                         SCAN -A2, PILOT

845.00                                                          100002   LANDING CHECKLIST
845.00       846.00          1.00                                   0B000001   READ NEXT ITEM ON
                                                                          CHECKLIST ON CONTROL
                                                                          COLUMN PLACARD

847.00       847.60          0.60                                   1P100076   CALL OUT -[RECALL]
847.60       848.00          0.40                                   1P100077   CALL OUT -[CHECKED]
848.00       849.00          1.00                                   0B000001   READ NEXT ITEM ON
                                                                          CHECKLIST ON CONTROL
                                                                          COLUMN PLACARD
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SINCE MISSION START		ACTIVITY	EVENT/PROCEDURE
BEGINNING	END	TIME	TASK
850.00	850.70	0.70	1P180078 CALL OUT -[SPEED BRAKES]
851.00	852.30	1.30	1P 02 MONITOR CALL-OUT
852.50	853.50	1.00	8B000001 READ NEXT ITEM ON CHECKLIST ON CONTROL COLUMN PLACARD
854.50	855.20	0.70	1P180080 CALL OUT -[LANDING GEAR]
855.20	856.20	1.00	1P180081 CALL OUT -[DOWN, THREE GREEN]
856.20	857.20	1.00	8B000001 READ NEXT ITEM ON CHECKLIST ON CONTROL COLUMN PLACARD
858.20	858.60	0.40	1P180082 CALL OUT -[FLAPS]
858.60	859.70	1.10	1P180083 CALL OUT -[FIFTEEN GREEN LIGHT]
861.10	862.20	1.10	1P180084 CALL OUT -[CHECKLIST COMPLETE]
861.10	862.20	1.10	1P 12 MONITOR CALL-OUT
850.00			00EV21 PILOT EXT VIS SCAN
855.00			180071 FLIGHT INSTRUMENT SCAN -A2, PILOT
865.00			00EV02 C/P EXT VIS SCAN
865.00	875.00	10.00	8A 10 PILOT EXTERNAL VISION SCAN
877.00			180073 FLIGHT INSTRUMENT SCAN -A1, COPILOT
877.00	887.00	10.00	2K 14 MON MAP VIDEO
877.00	887.00	10.00	2K 46 MON STRAIGHT TREND VECTOR SYMBOL
877.00	887.00	10.00	2K 33 MON CURVED TREND VECTOR SYMBOLS
877.00	887.00	10.00	2J 05 MON FLT PATH ANGLE INDIC
877.00	887.00	10.00	2J 04 MON FLT PATH ACCEL INDIC
877.00	887.00	10.00	2J 01 MON ROLL ATT INDIC
877.00	887.00	10.00	2J 19 MON PITCH REF INDIC
877.00	887.00	10.00	3A 10 MONITOR AIRSPEED INDIC
889.00			030007 ENGINE INSTRUMENT SCAN
889.00	889.44	0.44	7F 25 MON ENG NO 1 EPR IND
889.00	889.44	0.44	7F 30 MON ENG NO 2 EPR IND
889.44	889.88	0.44	7F 21 MON NO 1 ENG N1 IND
889.44	889.88	0.44	7F 22 MON NO 2 ENG N1 IND
889.88	890.32	0.44	7F 31 MON ENG NO 1 EXH GAS TEMP IND
889.88	890.32	0.44	7F 32 MON ENG NO 2 EXH GAS TEMP IND
890.32	890.76	0.44	7F 23 MON NO 1 ENG N2 IND
890.32	890.76	0.44	7F 24 MON NO 2 ENG N2 IND
890.76	891.20	0.44	7F 33 MON ENG NO 1 FUEL FLOW INDIC
890.76	891.20	0.44	7F 34 MON ENG NO 2 FUEL FLOW INDIC
891.20	891.64	0.44	7F 09 MON NO 1 ENG OIL PRESS INDIC
891.64	892.08	0.44	7F 10 MON NO 1 ENG OIL TEMP INDIC
891.64	892.08	0.44	7F 18 MON NO 2 ENG OIL TEMP INDIC
892.08	892.52	0.44	7F 11 MON NO 1 ENG OIL QTY INDIC
892.08	892.52	0.44	7F 19 MON NO 2 ENG OIL QTY INDIC

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SINCE MISSION START		ACTIVITY TIME	EVENT/PROCEDURE TASK
BEGINNING	END		
892.52	892.96	0.44	7F 12 MON NO 1 ENG VIBRATION AMPLITUDE INDIC
892.52	892.96	0.44	7F 20 MON NO 2 ENG VIBR AMPLITUDE INDIC
895.00			180071 FLIGHT INSTRUMENT SCAN -A2, PILOT
895.00			180048 MON RADIO ALTIMETER
895.00	897.00	2.00	3J 01 MON RADIO ALT ALTITUDE INDIC
900.00			00EV04 C/P EXT VIS SCAN
900.00	920.00	20.00	8A 10 PILOT EXTERNAL VISION SCAN
923.00			180085 DESCEND THRU -DECISION HEIGTH
923.00	925.50	2.50	3R 12 MON DECISION HGT LT ON FDI
925.50	926.30	0.80	1P180086 CALL OUT -[DECISION HEIGHT]
915.00			00EV21 PILOT EXT VIS SCAN
920.00			180071 FLIGHT INSTRUMENT SCAN -A2, PILOT
925.00			180084 CROSS RWY 08 MIDDLE MARKER
925.00	926.01	1.01	3V 15 MONITOR MIDDLE MARKER ANNUN LT ON AND AUDIBLE SIGNAL
926.00			16BL15 CROSS MIDDLE MARKER
930.00			00EV02 C/P EXT VIS SCAN
930.00	940.00	10.00	8A 10 PILOT EXTERNAL VISION SCAN
940.00			180073 FLIGHT INSTRUMENT SCAN -A1, COPILOT
940.00	950.00	10.00	2K 14 MON MAP VIDEO
940.00	950.00	10.00	2K 46 MON STRAIGHT TREND VECTOP SYMBOL
940.00	950.00	10.00	2K 33 MON CURVED TREND VECTOR SYMBOLS
940.00	950.00	10.00	2J 05 MON FLT PATH ANGLE INDIC
940.00	950.00	10.00	2J 04 MON FLT PATH ACCEL INDIC
940.00	950.00	10.00	2J 01 MON ROLL ATT INDIC
940.00	950.00	10.00	2J 19 MON PITCH REF INDIC
940.00	950.00	10.00	3A 10 MONITOR AIRSPEED INDIC
941.00			16BL16 CROSS RW THRESHOLD
950.00			16BL17 TOUCHDOWN
950.00			180038 TOUCHDOWN AND ROLL-OUT, AGCS AUTO LAND MODE CONTROLS A/C UNTILL 30KTS
950.00	980.00	30.00	2J 15 MON TV VIDEO
950.00	980.00	30.00	2J 40 MON EADI RNWY
950.00	980.00	30.00	2J 41 MON EADI DRIFT INDIC
950.00	980.00	30.00	7F 25 MON ENG NO 1 EPR IND
950.00	980.00	30.00	7F 30 MON ENG NO 2 EPR IND
980.00			180036 TOUCHDOWN AND ROLL-OUT, AGCS AUTO LAND MODE CONTROLS A/C UNTILL 30KTS
980.00	1010.00	30.00	2J 15 MON TV VIDEO
980.00	1010.00	30.00	2J 40 MON EADI RNWY
980.00	1010.00	30.00	2J 41 MON EADI DRIFT INDIC
980.00	1010.00	30.00	7F 25 MON ENG NO 1 EPR IND
980.00	1010.00	30.00	7F 30 MON ENG NO 2 EPR IND

SINCE MISSION START BEGINNING	END	ACTIVITY TIME	EVENT/PROCEDURE TASK
1010.00			100037 DISENGAGE ABCS
1010.00			00EV23 PILOT EXT VIS SCAN
984.00			10DL71 HANDOFF TO GROUND
984.00	985.80	1.80	1D16XX01 MON INFORMATION MANAGEMENT ATENSON
985.80	987.80	2.00	1D16XX02 MON INFORMATION MANAGEMENT DISPLAY [MODE-S UPLINK PNDG] AMBER
987.80	989.40	1.60	1X100001 LINE SELECT [ATC UPLINKS PENDING]
989.40	997.40	8.00	1D16XX07 READ -EXIT RUNWAY NEXT INTERSECTION. MONITOR GROUND 121.9 WHEN CLEAR OF RUNWAY
997.40	999.20	1.80	1X100041 LINE SELECT [WILCO]
1000.00			10DL72 TUNE AND MONITOR ATL GRND ON 121.9/VHF-2L
1000.00	1004.88	4.88	1B 01 MON VHF-2L-FREQ IND
1000.00	1002.90	2.90	1B 02 SET VHF-2L FREQ-WHOLE NO.S
1002.90	1004.88	1.98	1B 03 SET VHF-2L FREQ - FRACTIONS
1004.90	1006.39	1.49	1B 05 SET VHF-2 COMM TFR SW TO LEFT
1006.40	1008.40	2.00	1B 04 ADJ VHF-2 VOLUME
1009.00			10DL73 TAXI CLEARANCE FROM
1009.00	1010.80	1.80	1D16XX01 MON INFORMATION MANAGEMENT ATENSON
1010.80	1012.80	2.00	1D16XX02 MON INFORMATION MANAGEMENT DISPLAY [MODE-S UPLINK PNDG] AMBER
1012.80	1014.40	1.60	1X100001 LINE SELECT [ATC UPLINKS PENDING]
1014.40	1019.40	5.00	1D16XX08 READ -TAXI TO RAMP VIA NE/SW TAXIWAY.
1019.40	1021.20	1.80	1X100041 LINE SELECT [WILCO]

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B.5 ILS APPROACH WITH WEATHER DEVIATION–CONVENTIONAL FLIGHT DECK

Flying Pilot

SINCE MISSION START BEGINNING	END	ACTIVITY TIME	EVENT/PROCEDURE TASK
130.00			080019 FLIGHT INSTRU[illegible]T SCAN - B
130.00	190.00	60.00	3R 58 MON PITCH ATTITUDE INDIC ON FDI
130.00	190.00	60.00	3L 02 MON VERTICAL SPEED INDIC
130.00	190.00	60.00	3A 10 MONITOR AIRSPEED INDIC
130.00	190.00	60.00	3S 15 MONITOR A/C HEADING RELATIVE TO SELECTED HEADING ON CI
185.00			030007 ENGINE INSTRUMENT SCAN
150.00			00EV05 C/P EXT VIS SCAN
195.00			160048 MON ADF/RMI-2
195.00			16XB01 VECTOR FOR DOWNWIND OPTIONAL WX AVOIDNC
195.00	207.00	12.00	1P16ZZ01 N 515,TURN RT HDG270 DESCND AND MAINTAIN 6000 FT,CONTACT ATL APPR ON 127.25.
220.00	232.00	12.00	1P16AA01 NASA 515, TURN RT. HDG 300, DESCEND AND MAINTAIN 6000 FT CONTACT ATL 127.25
240.00			140007 HEADING CHANGE PROC.
240.00	250.00	10.00	3S 01 MONITOR A/C HEADING RELATIVE TO SELECTED HDG ON CI
240.00	250.00	10.00	4A 29 ACT FLT CONTROL TO CHANGE HDG
240.00	250.00	10.00	3L 02 MON VERTICAL SPEED INDIC
240.00	244.92	4.92	3S 11 SET COURSE DIGITS AND POINTER ON CI USING COURSE CURSOR CONT
245.00	255.00	10.00	3R 58 MON A/C ATTITUDE RELATIVE TO ROLL COMMAND ON FDI
240.00			16XL02 BEGIN TURN TO AVOID HEAVY WEATHER
210.00			16BL03 DESCEND THRU 11000.
200.00			16AA01 ADJUST THRUST AND PITCH TO MAINTAIN A 900 FPM DESCENT AT 250 KCAS USING PITCH CWS MODE OF A.P. PILOT HAS DETERMINED THAT THIS SHOULD PERMIT DECEL TO 210 FOR CROSSING BAHRR AT 5000 FT.
200.00	202.73	2.73	4B 07 MAKE MINOR THRUST ADJUSTMENT
200.00	205.00	5.00	4A 64 MANUALLY CONTROL A/C
240.00			160052 TUNE ATL APPROACH ON 127.25
246.00			160003 CONTACT ATL APPROACH ON 127.25
251.00	255.00	4.00	1P16YY90 NASA 515,ATL APPR. ROGER.

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SINCE MISSION START           ACTIVITY                                  EVENT/PROCEDURE
BEGINNING        END          TIME                                          TASK
210.00                                                                  090017   FLIGHT INSTRUMENT
                                                                                 SCAN - C
210.00        240.00             30.00                                     3R    56   MON PITCH ATTITUDE
                                                                                     INDIC ON FDI
210.00        240.00             30.00                                     3L    02   MON VERTICAL SPEED
                                                                                     INDIC
210.00        240.00             30.00                                     3A    10   MONITOR AIRSPEED
                                                                                     INDIC
210.00        240.00             30.00                                     3S    01   MONITOR A/C HEADING
                                                                                     RELATIVE TO SELECTED
                                                                                     HDG ON CI
255.00                                                                  00EV03   C/P EXT VIS SCAN
270.00                                                                  00EV03   C/P EXT VIS SCAN
250.00                                                                  090039   FLIGHT INSTRUMENT
                                                                                 SCAN - F
250.00        370.00            120.00                                     3R    57   MON PITCH ATTITUDE
                                                                                     INDIC ON FDI
250.00        370.00            120.00                                     3L    03   MON VERTICAL SPEED
                                                                                     INDIC
250.00        370.00            120.00                                     3A    11   MONITOR AIRSPEED
                                                                                     INDIC
250.00        370.00            120.00                                     3S    15   MONITOR A/C HEADING
                                                                                     RELATIVE TO SELECTED
                                                                                     HEADING ON CI
288.00                                                                  030007   ENGINE INSTRUMENT
                                                                                 SCAN
295.00                                                                  00EV09   C/P EXT VIS SCAN
330.00                                                                  18AA01   ADJUST THRUST AND
                                                                                 PITCH TO MAINTAIN A
                                                                                 900 FPM DESCENT AT
                                                                                 250 KCAS USING PITCH
                                                                                 CWS MODE OF A.P.
                                                                                 PILOT HAS DETERMINED
                                                                                 THAT THIS SHOULD
                                                                                 PERMIT DECEL TO 210
                                                                                 FOR CROSSING BAHRR
                                                                                 AT 6000 FT.
330.00        332.73              2.73                                     4B    07   MAKE MINOR THRUST
                                                                                     ADJUSTMENT
330.00        335.00              5.00                                     4A    04   MANUALLY CONTROL A/C
340.00                                                                  00EV04   C/P EXT VIS SCAN
363.00                                                                  030007   ENGINE INSTRUMENT
                                                                                 SCAN
370.00                                                                  18BL04   DESCEND THRU 8600.
370.00                                                                  18XB04   ALT STEP DOWN AND
                                                                                 VECTOR TO RESUME
                                                                                 AFTER WX AVOIDNCE
374.00        381.00              7.00                                    1P18BB94   NASA 518, TURN LEFT
                                                                                     HEADING 240,DESCEND
                                                                                     AND MAINTAIN 5000 FT
370.00                                                                  090017   FLIGHT INSTRUMENT
                                                                                 SCAN - C
370.00        400.00             30.00                                     3R    56   MON PITCH ATTITUDE
                                                                                     INDIC ON FDI
370.00        400.00             30.00                                     3L    02   MON VERTICAL SPEED
                                                                                     INDIC
370.00        400.00             30.00                                     3A    10   MONITOK AIRSPEED
                                                                                     INDIC
370.00        400.00             30.00                                     3S    01   MONITOR A/C HEADING
                                                                                     RELATIVE TO SELECTED
                                                                                     HDG ON CI
390.00                                                                  00EV05   C/P EXT VIS SCAN
400.00                                                                  140007   HEADING CHANGE PROC.
400.00        410.00             10.00                                     3S    01   MONITOR A/C HEADING
                                                                                     RELATIVE TO SELECTED
                                                                                     HDG ON CI
400.00        410.00             10.00                                     4A    28   ACT FLT CONTROL TO
                                                                                     CHANGE HDG
400.00        410.00             10.00                                     3L    03   MON VERTICAL SPEED
                                                                                     INDIC
```

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SINCE MISSION START           ACTIVITY                          EVENT/PROCEDURE
BEGINNING       END           TIME                                  TASK
400.00        404.92              4.92                                3S    11    SET COURSE DIGITS
                                                                                AND POINTER ON CI
                                                                                USING COURSE CURSOR
                                                                                CONT

405.00        415.00             10.00                                3R    58    MON A/C ATTITUDE
                                                                                RELATIVE TO ROLL
                                                                                COMMAND ON
                                                                                FDI

415.00                                                          00EV21    PILOT EXT VIS SCAN
415.00        420.00              5.00                                8A    10     PILOT  EXTERNAL
```

SINCE MISSION START BEGINNING	END	ACTIVITY TIME	EVENT/PROCEDURE TASK		
128.00			160007		DESCENT AND APPR--CH CHECKLIST - S
128.00	129.50	1.50	1P	02	MONITOR C...-OUT
146.00	147.90	1.90	1P	14	MONITOR CALL-OUT
148.00	150.57	2.57	3A	07	MON V-REF BUG SETTING
148.00	150.57	2.57	5A	05	SET V-REF BUG
151.00	154.00	3.00	5A	19	CAPT CHECK F.O.<S V-REF BUG SETTING
154.00	155.50	1.50	1P	06	MONITOR REPORT
157.60	158.90	1.30	1P	02	MONITOR CALL-OUT
130.00			090019		FLIGHT INSTRUMENT SCAN - D
130.00	190.00	60.00	3R	56	MON PITCH ATTITUDE INDIC ON FDI
130.00	190.00	60.00	3L	02	MON VERTICAL SPEED INDIC
130.00	190.00	60.00	3A	10	MONITOR AIRSPEED INDIC
130.00	190.00	60.00	3B	15	MONITOR A/C HEADING RELATIVE TO SELECTED HEADING ON CI
165.00			020007		ENGINE INSTRUMENT SCAN
172.00			00EV03		C/P EXT VIS SCAN
183.00			160048		MON ADF/RMI-2
195.00			16XL01		VECTOR FOR DOWN WIND - OPTIONAL WX AVOIDANCE
195.00	196.60	1.60	1D16XX01		MON INFORMATION MANAGEMENT ATENSON
196.60	198.60	2.00	1D16XX02		MON INFORMATION MANAGEMENT DISPLAY [MODE-S UPLINK PHDG] AMBER
200.40	210.40	10.00	1D16AA01		MONITOR UPLINK CALL-OUT FROM COPILOT
226.00	227.60	1.60	1D16XX01		MON INFORMATION MANAGEMENT ATENSON
227.60	229.60	2.00	1D16XX02		MON INFORMATION MANAGEMENT DISPLAY [MODE-S UPLINK PHDG] AMBER
231.40	241.40	10.00	1D16AL01		MONITOR COPILOT
240.00			140007		HEADING CHANGE PROC.
240.00	250.00	10.00	3B	01	MONITOR A/C HEADING RELATIVE TO SELECTED HDG ON CI
240.00	250.00	10.00	4A	28	ACT FLT CONTROL TO CHANGE HDG
240.00	250.00	10.00	3L	02	MON VERTICAL SPEED INDIC
240.00	244.92	4.92	3B	11	SET COURSE DIGITS AND POINTER ON CI USING COURSE CURSOR CONT
245.00	255.00	10.00	3R	58	MON A/C ATTITUDE RELATIVE TO ROLL COMMAND ON FDI
240.00			16XL02		BEGIN TURN TO AVOID HEAVY WEATHER
210.00			16BL03		DESCEND THRU 11000.
200.00			16AA01		ADJUST THRUST AND PITCH TO MAINTAIN A 900 FPM DESCENT AT 250 KCAS USING PITCH CWS MODE OF A.P. PILOT HAS DETERMINED THAT THIS SHOULD PERMIT DECEL TO 210 FOR CROSSING BAHRR AT 6000 FT.
200.00	202.73	2.73	4B	07	MAKE MINOR THRUST ADJUSTMENT
200.00	205.00	5.00	4A	64	MANUALLY CONTROL A/C

```
SINCE MISSION START              ACTIVITY                                    EVENT/PROCEDURE
BEGINNING        END             TIME                                            TASK
                                                                             160003    TUNE ATL APPROACH
240.00                                                                                 ON 127.25

                                                                             16DL03    MONITOR ATL APPROACH
240.00                                                                                 ON 127.25/VHF-2L

                                                                             080017    FLIGHT INSTRUMENT
210.00                                                                                 SCAN - C

210.00          240.00            30.00                                         3R   56   MON PITCH ATTITUDE
                                                                                         INDIC ON FDI

210.00          240.00            30.00                                         3L   02   MON VERTICAL SPEED
                                                                                         INDIC

210.00          240.00            30.00                                         3A   10   MONITOR AIRSPEED
                                                                                         INDIC

210.00          240.00            30.00                                         3S   01   MONITOR A/C HEADING
                                                                                         RELATIVE TO SELECTED
                                                                                         HDG ON CI

255.00                                                                       00EV03    C/P EXT VIS SCAN

270.00                                                                       00EV03    C/P EXT VIS SCAN

250.00                                                                       080039    FLIGHT INSTRUMENT
                                                                                       SCAN - F

250.00          370.00           120.00                                         3R   57   MON PITCH ATTITUDE
                                                                                         INDIC ON FDI

250.00          370.00           120.00                                         3L   03   MON VERTICAL SPEED
                                                                                         INDIC

250.00          370.00           120.00                                         3A   11   MONITOR AIRSPEED
                                                                                         INDIC

250.00          370.00           120.00                                         3S   15   MONITOR A/C HEADING
                                                                                         RELATIVE TO SELECTED
                                                                                         HEADING ON CI

288.00                                                                       030007    ENGINE INSTRUMENT
                                                                                       SCAN

295.00                                                                       00EV09    C/P EXT VIS SCAN

330.00                                                                       16AA01    ADJUST THRUST AND
                                                                                       PITCH TO MAINTAIN A
                                                                                       900 FPM DESCENT AT
                                                                                       250 KCAS USING PITCH
                                                                                       CWS MODE OF A.P.
                                                                                       PILOT HAS DETERMINED
                                                                                       THAT THIS SHOULD
                                                                                       PERMIT DECEL TO 210
                                                                                       FOR CROSSING BAHRR
                                                                                       AT 8000 FT.

330.00          332.73             2.73                                         4B   07   MAKE MINOR THRUST
                                                                                         ADJUSTMENT

330.00          335.00             5.00                                         XA   04   MANUALLY CONTROL A/C

340.00                                                                       00EV04    C/P EXT VIS SC/N

353.00                                                                       030007    ENGINE INSTRUMENT
                                                                                       SCAN

370.00                                                                       16BL04    DESCEND THRU 8800.

370.00                                                                       16XL04    ALTITUDE STEP DOWN
                                                                                       AND VECTOR TO RESUME
                                                                                       AFTER WX AVOIDANCE

379.00          380.00             1.00                                       1D16XX01   MON INFORMATION
                                                                                         MANAGEMENT
                                                                                         ATENSON

380.00          382.00             2.00                                       1D16XX02   MON INFORMATION
                                                                                         MANAGEMENT DISPLAY
                                                                                         [MODE-S UPLINK PHDG]
                                                                                         AMBER

384.40          390.40             6.00                                       1D16AL04   MON COPILOT - TURN
                                                                                         LEFT HEADING 240.
                                                                                         DESCEND AND MAIN-
                                                                                         TAIN 8000 MSL.

370.00                                                                       080017    FLIGHT INSTRUMENT
                                                                                       SCAN - C

370.00          400.00            30.00                                         3R   56   MON PITCH ATTITUDE
                                                                                         INDIC ON FDI

370.00          400.00            30.00                                         3L   02   MON VERTICAL SPEED
                                                                                         INDIC

370.00          400.00            30.00                                         3A   10   MONITOR AIRSPEED
                                                                                         INDIC

370.00          400.00            30.00                                         3S   01   MONITOR A/C HEADING
                                                                                         RELATIVE TO SELECTED
                                                                                         HDG ON CI

390.00                                                                       00EV08    C/P EXT VIS SCAN

400.00                                                                       140007    HEADING CHANGE PROC.
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SINCE MISSION START            ACTIVITY                        EVENT/PROCEDURE
BEGINNING       END            TIME                                TASK
400.00        410.00             10.00                             3S    01   MONITOR A/C HEADING
                                                                            RELATIVE TO SELECTED
                                                                            HDG ON CI

400.00        410.00             10.00                             4A    28   ACT FLT CONTROL TO
                                                                            CHANGE HDG

400.00        410.00             10.00                             3L    02   MON VERTICAL SPEED
                                                                            INDIC

400.00        404.82              4.82                             3S    11   SET COURSE DIGITS
                                                                            AND POINTER ON CI
                                                                            USING COURSE CURSOR
                                                                            CONT

405.00        415.00             10.00                             3R    58   MON A/C ATTITUDE
                                                                            RELATIVE TO ROLL
                                                                            COMMAND ON
                                                                            FDI

415.00                                                         SUEV21   PILOT EXT VIS SCAN

415.00        420.00              5.00                             8A    10   PILOT EXTERNAL
                                                                            VISION SCAN

425.00                                                         090017   FLIGHT INSTRUMENT
                                                                        SCAN - C

425.00        455.00             30.00                             3R    66   MON PITCH ATTITUDE
                                                                            INDIC ON FDI

425.00        455.00             30.00                             3L    02   MON VERTICAL SPEED
                                                                            INDIC

425.00        455.00             30.00                             3A    10   MONITOR AIRSPEED
                                                                            INDIC

425.00        455.00             30.00                             3S    01   MONITOR A/C HEADING
                                                                            RELATIVE TO SELECTED
                                                                            HDG ON CI

460.00                                                         090017   FLIGHT INSTRUMENT
                                                                        SCAN - C

460.00        490.00             30.00                             3R    66   MON PITCH ATTITUDE
                                                                            INDIC ON FDI

460.00        490.00             30.00                             3L    02   MON VERTICAL SPEED
                                                                            INDIC

460.00        490.00             30.03                             3A    10   MONITOR AIRSPEED
                                                                            INDIC

460.00        490.00             30.00                             3S    01   MONITOR A/C HEADING
                                                                            RELATIVE TO SELECTED
                                                                            HDG ON CI

430.00                                                         080007   ENGINE INSTRUMENT
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B.6 ILS APPROACH WITH WEATHER DEVIATION—CONVENTIONAL FLIGHT DECK

Nonflying Pilot

SINCE MISSION START		ACTIVITY	EVENT/PROCEDURE		
BEGINNING	END	TIME		TASK	
95.00	105.44	0.44	7F	25	MON ENG EPR IND
95.00	105.44	0.44	7F	30	MON ENG No. 2 EPR IND
105.44	105.88	0.44	7F	21	MON NO 1 ENG N1 IND
105.44	105.88	0.44	7F	22	MON NO 2 ENG N1 IND
105.88	106.32	0.44	7F	31	MON ENG NO 1 EXH GAS TEMP IND
105.88	106.32	0.44	7F	32	MON ENG NO 2 EXH GAS TEMP IND
106.32	106.76	0.44	7F	23	MON NO 1 ENG N2 IND
106.32	106.76	0.44	7F	24	MON NO 2 ENG N2 IND
106.76	107.20	0.44	7F	33	MON ENG NO 1 FUEL FLOW INDIC
106.76	107.20	0.44	7F	34	MON ENG NO 2 FUEL FLOW INDIC
107.20	107.64	0.44	7F	09	MON NO 1 ENG OIL PRESS INDIC
107.64	108.08	0.44	7F	10	MON NO 1 ENG OIL TEMP INDIC
107.64	108.08	0.44	7F	18	MON NO 2 ENG OIL TEMP INDIC
108.08	108.52	0.44	7F	11	MON NO 1 ENG OIL QTY INDIC
108.08	108.52	0.44	7F	19	MON NO 2 ENG OIL QTY INDIC
108.52	108.96	0.44	7F	12	MON NO 1 ENG VIBRATION AMPLITUDE INDIC
108.52	108.96	0.44	7F	20	MON NO 2 ENG VIBR AMPLITUDE INDIC
150.00			08EV05		C/P EXT VIS SCAN
150.00	175.00	25.00	8A	11	PILOT EXTERNAL VISION SCAN
195.00			160040		MON ADF/RMI-2
195.00	197.20	2.20	5E	39	MON ADF NO.1 POINTER ON ADF/RMI 2 INDIC
195.00			16XB01		VECTOR FOR DOWNWIND OPTIONAL WX AVOIDNC
195.00	207.00	12.00	1P16XX01		N 515,TURN RT HDG270 DESCND AND MAINTAIN 6000 FT,CONTACT ATL APPR ON 127.25.
207.00	214.00	7.00	1A	25	ACTUATE COMM 2 PUSH-TO-TALK SW
214.00	217.00	3.00	1A	26	ACTUATE COMM 2 PUSH-TO-TALK SW
207.00	217.00	10.00	1P16XY01		APPROACH,515 HAS STRONG WX RADAR ECHOES.REQUEST HDG 300.WILL ADVISE CLR.
220.00	232.00	12.00	1P16AA01		NASA 515, TURN RT. HDG 300. DESCEND AND MAINTAIN 6000 FT CONTACT ATL 127.25
232.00	239.00	7.00	1A	26	ACTUATE COMM 2 PUSH-TO-TALK SW
232.00	239.00	7.00	1P16BB01		515,ROGER,HDG 300, MAINTAIN 6000, APPR ON 127.25
240.00			140007		HEADING CHANGE PROC.
240.00			16XL02		BEGIN TURN TO AVOID HEAVY WEATHER
210.00			16BL03		DESCEND THRU 11000.
200.00			16AA01		ADJUST THRUST AND PITCH TO MAINTAIN A 900 FPM DESCENT AT 250 KCAS USING PITCH CWS MODE OF A.P. PILOT HAS DETERMINED THAT THIS SHOULD PERMIT DECEL TO 210 FOR CROSSING BAHRR AT 6000 FT.
240.00			160092		TUNE ATL APPROACH ON 127.25
240.00	244.88	4.88	1B	01	MON VHF-2L FREQ IND
240.00	242.90	2.90	1B	02	SET VHF-2L FREQ-WHOLE NO.S

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SINCE MISSION START        ACTIVITY                         EVENT/PROCEDURE
BEGINNING      END         TIME                                  TASK
242.88      244.86           1.88                              1B    03   SET VHF-2L FREQ -
                                                                          FRACTIONS

246.00                                                      100003   CONTACT ATL APPROACH
                                                                     ON 127.25

246.00      247.40           1.40                              1B    05   SET VHF-2 COMM TFR
                                                                          SW TO LEFT

248.40      251.90           3.50                              1A    10   ACT PUSH-TO-TALK SW

248.40      251.90           3.50                        1P10XX03   ATL APPR,NASA 515
                                                                          DESCENDING TO 6000.

251.90      255.90           4.00                        1P10YY00   NASA 515.ATL APPR.
                                                                          ROGER.

210.00                                                      000017   FLIGHT INSTRUMENT
                                                                     SCAN - C

255.00                                                      00EV03   C/P EXT VIS SCAN

255.00      270.00          15.00                              8A    10    PILOT  EXTERNAL
                                                                          VISION SCAN

270.00                                                      00EV03   C/P EXT VIS SCAN

270.00      285.00          15.00                              8A    10    PILOT  EXTERNAL
                                                                          VISION SCAN

280.00                                                      000030   FLIGHT INSTRUMENT
                                                                     SCAN - F

288.00                                                      030007   ENGINE INSTRUMENT
                                                                     SCAN

288.00      288.44           0.44                              7F    28   MON ENG NO 1 EPR IND

288.00      288.44           0.44                              7F    30   MON ENG NO 2 EPR IND

288.44      288.88           0.44                              7F    21   MON NO 1 ENG N1 IND

288.44      288.88           0.44                              7F    22   MON NO 2 ENG N1 IND

288.88      289.32           0.44                              7F    31   MON ENG NO 1 EXH GAS
                                                                         TEMP IND

288.88      289.32           0.44                              7F    32   MON ENG NO 2 EXH GAS
                                                                         TEMP IND

289.32      289.76           0.44                              7F    23   MON NO 1 ENG N2 IND

289.32      289.76           0.44                              7F    24   MON NO 2 ENG N2 IND

289.76      290.20           0.44                              7F    33   MON ENG NO 1 FUEL
                                                                         FLOW INDIC

289.76      290.20           0.44                              7F    34   MON ENG NO 2 FUEL
                                                                         FLOW INDIC

290.20      290.64           0.44                              7F    09   MON NO 1 ENG OIL
                                                                         PRESS INDIC

290.64      291.08           0.44                              7F    10   MON NO 1 ENG OIL
                                                                         TEMP INDIC

290.64      291.08           0.44                              7F    18   MON NO 2 ENG OIL
                                                                         TEMP INDIC

291.08      291.52           0.44                              7F    11   MON NO 1 ENG OIL QTY
                                                                         INDIC

291.08      291.52           0.44                              7F    19   MON NO 2 ENG OIL
                                                                         QTY INDIC

291.52      291.96           0.44                              7F    12   MON NO 1 ENG VIBRA-
                                                                         TION AMPLITUDE INDIC

291.52      291.96           0.44                              7F    20   MON NO 2 ENG VIBR
                                                                         AMPLITUDE INDIC

295.00                                                      00EV09   C/P EXT VIS SCAN

295.00      340.00          45.00                              8A    12    PILOT EXTERNAL
                                                                          VISION SCAN

330.00                                                      10AA01   ADJUST THRUST AND
                                                                     PITCH TO MAINTAIN A
                                                                     900 FPM DESCENT AT
                                                                     250 KCAS USING PITCH
                                                                     CWS MODE OF A.P.
                                                                     PILOT HAS DETERMINED
                                                                     THAT THIS SHOULD
                                                                     PERMIT DECEL TO 210
                                                                     FOR CROSSING BAHRR
                                                                     AT 6000 FT.

340.00                                                      00EV04   C/P EXT VIS SCAN

340.00      360.00          20.00                              3A    10    PILOT  EXTERNAL
                                                                          VISION SCAN
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SINCE MISSION START		ACTIVITY TIME	EVENT/PROCEDURE TASK		
BEGINNING	END				
363.00			030007		ENGINE INSTRUMENT SCAN
363.00	363.44	0.44	7F	28	MON ENG NO 1 EPR IND
363.00	363.44	0.44	7F	30	MON ENG NO 2 EPR IND
363.44	363.88	0.44	7F	21	MON NO 1 ENG N1 IND
363.44	363.88	0.44	7F	22	MON NO 2 ENG N1 IND
363.88	364.32	0.44	7F	31	MON ENG NO 1 EXH GAS TEMP IND
363.88	364.32	0.44	7F	32	MON ENG NO 2 EXH GAS TEMP IND
364.32	364.76	0.44	7F	23	MON NO 1 ENG N2 IND
364.32	364.76	0.44	7F	24	MON NO 2 FNG N2 IND
364.76	365.20	0.44	7F	33	MON ENG NO 1 FUEL FLOW INDIC
364.76	365.20	0.44	7F	34	MON ENG NO 2 FUEL FLOW INDIC
365.20	365.64	0.44	7F	09	MON PO 1 ENG OIL PRESS INDIC
365.64	366.08	0.44	7F	10	MON NO 1 ENC OIL TEMP INDIC
365.64	366.08	0.44	7F	18	MON NO 2 ENC OIL TEMP INDIC
366.08	366.52	0.44	7F	11	MON NO 1 ENG OIL QTY INDIC
366.08	366.52	0.44	7F	19	MON NO 2 ENG OIL QTY INDIC
366.52	366.96	0.44	7F	12	MON NO 1 ENG VIBRATION AMPLITUDE INDIC
366.52	366.96	0.44	7F	20	MON NO 2 ENG VIBR AMPLITUDE INDIC
370.00			16BL04		DESCEND THRU 8000.
370.00			16XB04		ALT STEP DOWN AND VECTOR TO RESUME AFTER WX AVOIDNCE
370.00	373.00	3.00	1P16AA04		APPROACH, 515 IS CLEAR OF WEATHER
370.00	373.00	3.00	1A	28	ACTUATE COMM 2 PUSH-TO-TALK SW
374.00	381.00	7.00	1P16BB04		NASA 515, TURN LEFT HEADING 240,DESCEND AND MAINTAIN 5000 FT
381.00	384.00	3.00	1A	28	ACTUATE COMM 2 PUSH-TO-TALK SW
384.00	385.70	1.70	1A	28	ACTUA:E COMM 2 PUSH-TO-TALK SW
381.00	386.00	5.00	1P16CC04		515, ROGER. TURN LT HDG 240.MAINTN 5000.
370.00			000017		FLIGHT INSTRUMENT SCAN - C
390.00			00EV08		C/P EXT VIS SCAN
390.00	430.00	40.00	8A	11	PILOT EXTERNAL VISION SCAN
400.00			140007		HEADING CHANGE PROC.
415.00			00EV21		PILOT EXT VIS SCAN
425.00			000017		FLIGHT INSTRUMENT SCAN - C
460.00			000017		FLIGHT INSTRUMENT SCAN - C
430.00			030007		ENGINE INSTRUMENT SCAN
430.00	430.44	0.44	7F	28	MON EN3 NO 1 EPR IND
430.00	430.44	0.44	7F	30	MON ENG NO 2 EPR IND
430.44	430.88	0.44	7F	21	MON NO 1 ENG N1 IND
430.44	430.88	0.44	7F	22	MON NO 2 ENG N1 IND

SINCE MISSION START		ACTIVITY	EVENT/PROCEDURE		
BEGINNING	END	TIME	TASK		
430.88	431.32	0.44	7F	31	MON ENG NO 1 EXH GAS TEMP IND
430.88	431.32	0.44	7F	32	MON ENG NO 2 EXH GAS TEMP IND
431.32	431.76	0.44	7F	23	MON NO 1 ENG N2 IND
431.32	431.76	0.44	7F	24	MON NO 2 ENG N2 IND
431.76	432.20	0.44	7F	33	MON ENG NO 1 FUEL FLOW INDIC
431.76	432.20	0.44	7F	34	MON ENG NO 2 FUEL FLOW INDIC
432.20	432.64	0.44	7F	09	MON NO 1 ENG OIL PRESS INDIC
432.64	433.08	0.44	7F	10	MON NO 1 ENG OIL TEMP INDIC
432.64	433.08	0.44	7F	18	MON NO 2 ENG OIL TEMP INDIC
433.08	433.52	0.44	7F	11	MON NO 1 ENG OIL QTY INDIC
433.08	433.52	0.44	7F	19	MON NO 2 ENG OIL QTY INDIC
433.52	433.96	0.44	7F	12	MON NO 1 ENG VIBRATION AMPLITUDE INDIC
433.52	433.96	0.44	7F	20	MON NO 2 ENG VIBR AMPLITUDE INDIC
440.00			00EV03	C/P EXT VIS SCAN	
440.00	455.00	15.00	9A	10	PILOT EXTERNAL VISION SCAN

SINCE MISSION START BEGINNING	END	ACTIVITY TIME	EVENT/PROCEDURE TASK
86.00			020007 ENGINE INSTRUM SCAN
165.00	165.44	0.44	7F 25 MON ENG NO 1 EPR IND
165.00	165.44	0.44	7F 26 MON ENG NO 2 EPR IND
165.44	165.88	0.44	7F 21 MON NO 1 ENG N1 IND
165.44	165.88	0.44	7F 27 MON NO 2 ENG N1 IND
165.88	166.32	0.44	7F 31 MON ENG NO 1 EXH GAS TEMP IND
165.88	166.32	0.44	7F 32 MON ENG NO 2 EXH GAS TEMP IND
166.32	166.76	0.44	7F 23 MON NO 1 ENG N2 IND
166.32	166.76	0.44	7F 24 MON NO 2 ENG N2 IND
166.76	167.20	0.44	7F 33 MON ENG NO 1 FUEL FLOW INDIC
166.76	167.20	0.44	7F 34 MON ENG NO 2 FUEL FLOW INDIC
167.20	167.64	0.44	7F 09 MON NO 1 ENG OIL PRESS INDIC
167.64	168.08	0.44	7F 10 MON NO 1 ENG OIL TEMP INDIC
167.64	168.08	0.44	7F 18 MON NO 2 ENG OIL TEMP INDIC
168.08	168.52	0.44	7F 11 MON NO 1 ENG OIL QTY INDIC
168.08	168.52	0.44	7F 19 MON NO 2 ENG OIL QTY INDIC
168.52	168.96	0.44	7F 12 MON NO 1 ENG VIBRATION AMPLITUDE INDIC
168.52	168.96	0.44	7F 20 MON NO 2 ENG VIBR AMPLITUDE INDIC
172.00			00EV03 C/P EXT VIS SCAN
172.00	187.00	15.00	8A 10 PILOT EXTERNAL VISION SCAN
195.00			100048 MON ADF/RMI-2
195.00	197.20	2.20	8E 20 MON ADF NO.1 POINTER ON ADF/RMI 2 INDIC
195.00			10XL01 VECTOR FOR DOWN WIND - OPTIONAL WX AVOIDANCE
195.00	196.60	1.60	1D10XX01 MON INFORMATION MANAGEMENT ATENSON
196.60	198.60	2.00	1D10XX02 MON INFORMATION MANAGEMENT DISPLAY [MODE-S UPLINK PNDG] AMBER
198.60	200.40	1.80	1X100001 LINE SELECT [ATC UPLINKS PENDING]

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OF POOR QUALITY

SINCE MISSION START BEGINNING	END	ACTIVITY TIME	EVENT/PROCEDURE TASK
200.40	210.40	10.00	1D16XX01 READ -TURN RT HDG 270,DESCND AND MAINTAIN 6000 FT,MONITOR ATL APPR ON 127.25
210.40	212.20	1.80	1X160030 LINE SELECT [UNABLE]
212.20	214.00	1.80	1X160024 LINE SELECT [STRONG WX RADAR ECHOES]
214.00	215.80	1.80	1X160014 LINE SELECT [HEADING REQUEST]
215.80	217.00	1.20	1X160033 PRESS KEY [3]
217.00	218.20	1.20	1X160040 PRESS KEY [0]
218.20	219.40	1.20	1X160040 PRESS KEY [0]
219.40	221.20	1.80	1X160029 LINE SELECT [REQ TEM HDG XXX-WILL ADVISE]
226.00	227.80	1.80	1D16XX01 MON INFORMATION MANAGEMENT ATENSON
227.80	229.80	2.00	1D16XX02 MON INFORMATION MANAGEMENT DISPLAY [MODE-S UPLINK PNDG] AMBER
229.80	231.40	1.80	1X160001 LINE SELECT [ATC UPLINKS PENDING]
231.40	241.40	10.00	1D16XL01 READ -TURN RT HDG 300, DESCEND AND MAINTAIN 6000 MSL MONITOR APPR 127.25
241.40	243.20	1.80	1X160030 LINE SELECT [UNABLE]
240.00			140007 HEADING CHANGE PROC.
240.00			16XL02 BEGIN TURN TO AVOID HEAVY WEATHER
210.00			16DL03 DESCEND THRU 11000.
200.00			16AA01 ADJUST THRUST AND PITCH TO MAINTAIN A 900 FPM DESCENT AT 250 KCAS USING PITCH CWS MODE OF A.P. PILOT HAS DETERMINED THAT THIS SHOULD PERMIT DECEL TO 210 FOR CROSSING BANRR AT 5000 FT.
240.00			160092 TUNE ATL APPROACH ON 127.25
240.00	244.80	4.80	1B 01 MON VHF-2L FREQ IND
240.00	242.90	2.90	1B 02 SET VHF-2L FREQ-WHOLE NO.S
242.90	244.80	1.90	1B 03 SET VHF-2L FREQ - FRACTIONS
246.00			16DL03 MONITOR ATL APPROACH ON 127.25/VHF-2L
246.00	247.40	1.40	1B 05 SET VHF-2 COMM TFR SW TO LEFT
247.50	249.50	2.00	1B 04 ADJ VHF-2 VOLUME
210.00			090017 FLIGHT INSTRUMENT SCAN - C
255.00			00EV03 C/P EXT VIS SCAN
255.00	270.00	15.00	8A 10 PILOT EXTERNAL VISION SCAN
270.00			00EV03 C/P EXT VIS SCAN
270.00	285.00	15.00	8A 10 PILOT EXTERNAL VISION SCAN
250.00			090039 FLIGHT INSTRUMENT SCAN - F
288.00			030007 ENGINE INSTRUMENT SCAN
288.00	288.44	0.44	7F 25 MON ENG NO 1 EPR IND
288.00	288.44	0.44	7F 30 MON ENG NO 2 EPR IND
288.44	288.88	0.44	7F 21 MON NO 1 ENG N1 IND
288.44	288.88	0.44	7F 22 MON NO 2 ENG N1 IND
288.88	289.32	0.44	7F 31 MON ENG NO 1 EXH GAS TEMP IND

SINCE MISSION START BEGINNING	END	ACTIVITY TIME	EVENT/PROCEDURE TASK
288.88	289.32	0.44	7F 32 MON ENG NO 2 EXH GAS TEMP IND
289.32	289.76	0.44	7F 23 MON NO 1 ENG N2 IND
289.32	289.76	0.44	7F 24 MON NO 2 ENG N2 IND
289.76	290.20	0.44	7F 33 MON ENG NO 1 FUEL FLOW INDIC
289.76	290.20	0.44	7F 34 MON ENG NO 2 FUEL FLOW INDIC
290.20	290.64	0.44	7F 09 MON NO 1 ENG OIL PRESS INDIC
290.64	291.08	0.44	7F 10 MON NO 1 ENG OIL TEMP INDIC
290.64	291.08	0.44	7F 18 MON NO 2 ENG OIL TEMP INDIC
291.08	291.52	0.44	7F 11 MON NO 1 ENG OIL QTY INDIC
291.08	291.52	0.44	7F 19 MON NO 2 ENG OIL QTY INDIC
291.52	291.96	0.44	7F 12 MON NO 1 ENG VIBRATION AMPLITUDE INDIC
291.52	291.96	0.44	7F 20 MON NO 2 ENG VIBR AMPLITUDE INDIC
295.00			00EV03 C/P EXT VIS SCAN
295.00	340.00	45.00	8A 12 PILOT EXTERNAL VISION SCAN
330.00			10AA01 ADJUST THRUST AND PITCH TO MAINTAIN A 900 FPM DESCENT AT 250 KCAS USING PITCH CWS MODE OF A.P. PILOT HAS DETERMINED THAT THIS SHOULD PERMIT DECEL TO 210 FOR CROSSING BAHRR AT 5000 FT.
340.00			00EV04 C/P EXT VIS SCAN
370.00			10XL04 ALTITUDE STEP DOWN AND VECTOR TO RESUME AFTER WX AVOIDANCE
370.00	371.00	1.00	1X100002 LINE SELECT [REQUEST FOR CLEARANCE]
371.00	372.00	1.00	1X100020 LINE SELECT [RESUME ON-COURSE]
379.00	380.00	1.00	1D10XX01 MON INFORMATION MANAGEMENT ATENSON
380.00	382.00	2.00	1D10XX02 MON INFORMATION MANAGEMENT DISPLAY [MODE-S UPLINK PNDG] AMBER
382.00	384.40	1.00	1X100001 LINE SELECT [ATC UPLINKS PENDING]
384.40	390.40	6.00	1D10XL04 READ - TURN LEFT HEADING 240. DESCEND < MAINTAIN 5000 MSL.
390.40	392.20	1.80	1X100030 LINE SELECT [UNABLE]
370.00			090017 FLIGHT INSTRUMENT SCAN - C
390.00			00EV05 C/P EXT VIS SCAN
390.00	430.00	40.00	8A 11 PILOT EXTERNAL VISION SCAN
400.00			140007 HEADING CHANGE PROC.
415.00			00EV21 PILOT EXT VIS SCAN
425.00			090017 FLIGHT INSTRUMENT SCAN - C
460.00			090017 FLIGHT INSTRUMENT SCAN - C
430.00			030007 ENGINE INSTRUMENT SCAN
430.00	430.44	0.44	7F 25 MON ENG NO 1 EPR IND

SINCE MISSION START		ACTIVITY	EVENT/PROCEDURE		
BEGINNING	END	TIME	TASK		
430.00	430.44	0.44	7F	30	MON ENG NO 2 EPR IND
430.44	430.88	0.44	7F	21	MON NO 1 ENG N1 IND
430.44	430.88	0.44	7F	22	MON NO 2 ENG N1 IND
430.88	431.32	0.44	7F	31	MON ENG NO 1 EXH GAS TEMP IND
430.88	431.32	0.44	7F	32	MON ENG NO 2 EXH GAS TEMP IND
431.32	431.76	0.44	7F	23	MON NO 1 ENG N2 IND
431.32	431.76	0.44	7F	24	MON NO 2 ENG N2 IND
431.76	432.20	0.44	7F	33	MON ENG NO 1 FUEL FLOW INDIC
431.76	432.20	0.44	7F	34	MON ENG NO 2 FUEL FLOW INDIC
432.20	432.64	0.44	7F	09	MON NO 1 ENG OIL PRESS INDIC
432.64	433.08	0.44	7F	10	MON NO 1 ENG OIL TEMP INDIC
432.64	433.08	0.44	7F	18	MON NO 2 ENG OIL TEMP INDIC
433.08	433.52	0.44	7F	11	MON NO 1 ENG OIL QTY INDIC
433.08	433.52	0.44	7F	19	MON NO 2 ENG OIL QTY INDIC
433.52	433.96	0.44	7F	12	MON NO 1 ENG VIBRA- TION AMPLITUDE INDIC
433.52	433.96	0.44	7F	20	MON NO 2 ENG VIBR

B.7 ILS APPROACH WITH WEATHER DEVIATION–ADVANCED FLIGHT DECK

Flying Pilot

SINCE MISSION START BEGINNING	END	ACTIVITY TIME	EVENT/PROCEDURE TASK
185.00			090051 FLIGHT INSTRUME SCAN -A1
.85.00	195.00	10.00	2J 02 MON PITCH ..ITUDE INDIC
185.00	195.00	10.00	2L 03 MON VERTICAL SPEED INDIC
185.00	195.00	10.00	3A 10 MONITOR AIRSPEED INDIC
185.00	195.00	10.00	2K 14 MON MAP VIDEO
185.00	195.00	10.00	2K 46 MON STRAIGHT TREND VECTOR SYMBOL
185.00	195.	10.00	2K 33 MON CURVED TREND VECTOR SYMBOLS
195.00			160046 MON ADF/RMI-2
195.00			16AB01 VECTOR FOR DOWNWIND OPTIONAL WX AVOIDNC
195.00	207.00	12.00	1P16XX01 N 515,TURN RT HDG270 DESCND AND MAINTAIN 6000 FT,CONTACT ATL APPR ON 127.25.
220.00	232.00	12.00	1P16AA01 NASA 515, TURN RT. HDG 300, DESCEND AND MAINTAIN 6000 FT CONTACT ATL 127.25
240.00			160081 ENTER/ARM NEW ALT IN MCP
240.00	242.47	2.47	2H 33 ROTATE ALT ENG KNOB
240.00	240.78	0.78	2H 31 MON ALT ENG MODE LT BLUE - ALT ENG MODE PRESELECTED
241.40	242.48	1.08	2H 34 READ ALT ENG VALUE ON DIGITAL INDIC
242.60	243.02	1.42	2H 29 PRESS ALT ENG MODE S SW
243.30	244.08	0.78	2H 30 MON ALT ENG MODE LT ORANGE - ALT ENG MODE ARMED
240.00			16XL02 BEGIN TURN TO AVOID HEAVY WEATHER
235.00			160082 ENTER NEW HEADNG IN MCP
235.00	237.50	2.50	2H 19 ROTATE TKA SEL KNOB
235.00	236.11	1.11	2H 20 READ TKA SEL VALUE ON DIGITAL INDIC
237.50	238.27	0.77	2H 15 MON TKA SEL MODE LT GREEN - TKA SEL MODE ENGAGED
210.00			16BL03 DESCEND THRU 11000.
210.00			090051 FLIGHT INSTRUMENT SCAN -A1
210.00	220.00	10.00	2J 02 MON PITCH ATTITUDE INDIC
210.00	220.00	10.00	2L 03 MON VERTICAL SPEED INDIC
210.00	220.00	10.00	3A 10 MONITOR AIRSPEED INDIC
210.00	220.00	10.00	2K 14 MON MAP VIDEO

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SINCE MISSION START BEGINNING	END	ACTIVITY TIME	EVENT/PROCEDURE TASK
210.00	220.00	10.00	2K 48 MON STRAIGHT TREND VECTOR SYMBOL
210.00	220.30	10.00	2K 33 MON CURVED TREND VECTOR SYMBOLS
240.00			100092 TUNE ATL APPROACH ON 127.25
248.00			100093 CONTACT ATL APPROACH ON 127.25
251.00	255.00	4.00	1P10YY90 NASA 515,ATL APPR. NUMBER.
255.00			00EV03 C/P EXT VIS SCAN
270.00			00EV03 C/P EXT VIS SCAN
250.00			090048 FLIGHT INSTRUMENT SCAN -A2
250.00	280.00	30.00	2J 02 MON PITCH ATTITUDE INDIC
250.00	280.00	30.00	3L 02 MON VERTICAL SPEED INDIC
250.00	280.00	30.00	3A 10 MONITOR AIRSPEED INDIC
250.00	280.00	30.00	2K 14 MON MAP VIDEO
250.00	280.00	30.00	2K 48 MON STRAIGHT TREND VECTOR SYMBOL
250.00	280.00	30.00	2K 33 MON CURVED TREND VECTOR SYMBOLS
280.00			090048 FLIGHT INSTRUMENT SCAN -A2
280.00	310.00	30.00	2J 02 MON PITCH ATTITUDE INDIC
280.00	310.00	30.00	3L 02 MON VERTICAL SPEED INDIC
280.00	310.00	30.00	3A 10 MONITOR AIRSPEED INDIC
280.00	310.00	30.00	2K 14 MON MAP VIDEO
280.00	310.00	30.00	2K 48 MON STRAIGHT TREND VECTOR SYMBOL
280.00	310.00	30.00	2K 33 MON CURVED TREND VECTOR SYMBOLS
310.00			090048 FLIGHT INSTRUMENT SCAN -A2
310.00	340.00	30.00	2J 02 MON PITCH ATTITUDE INDIC
310.00	340.00	30.00	3L 02 MON VERTICAL SPEED INDIC
310.00	340.00	30.00	3A 10 MONITOR AIRSPEED INDIC
310.00	340.00	30.00	2K 14 MON MAP VIDEO
310.00	340.00	30.00	2K 48 MON STRAIGHT TREND VECTOR SYMBOL
310.00	340.00	30.00	2K 33 MON CURVED TREND VECTOR SYMBOLS
340.00			090048 FLIGHT INSTRUMENT SCAN -A2
340.00	370.00	30.00	2J 02 MON PITCH ATTITUDE INDIC
340.00	370.00	30.00	3L 02 MON VERTICAL SPEED INDIC
340.00	370.00	30.00	3A 10 MONITOR AIRSPEED INDIC
340.00	370.00	30.00	2K 14 MON MAP VIDEO
340.00	370.00	30.00	2K 48 MON STRAIGHT TREND VECTOR SYMBOL
340.00	370.00	30.00	2K 33 MON CURVED TREND VECTOR SYMBOLS
288.00			030007 ENGINE INSTRUMENT SCAN
295.00			00EV09 C/P EXT VIS SCAN
340.00			00EV04 C/P EXT VIS SCAN

SINCE MISSION START BEGINNING	END	ACTIVITY TIME	EVENT/PROCEDURE TASK
363.00			020007 ENGINE INSTRUMENT SCAN
370.00			10BL04 DESCEND THRU 8000.
370.00			10XB04 ALT STEP DOWN AND VECTOR TO RESUME AFTER WX AVOIDNCE
374.00	381.00	7.00	1P10BB04 NASA 515, TURN LEFT HEADING 240.DESCEND AND MAINTAIN 5000 FT
380.00			100001 ENTER/ARM NEW ALT IN MCP
380.00	382.47	2.47	2H 33 ROTATE ALT ENG KNOB
380.00	380.78	0.78	2H 31 MON ALT ENG MODE LT BLUE - ALT ENG MODE PRESELECTED
381.40	382.40	1.00	2H 34 READ ALT ENG VALUE ON DIGITAL INDIC
382.50	383.92	1.42	2H 28 PRESS ALT ENG MODE S SW
383.90	384.68	0.78	2H 30 MON ALT ENG MODE LT ORANGE - ALT ENG MODE ARMED
385.00			100002 ENTER NEW HEADNG IN MCP
385.00	387.50	2.50	2H 19 ROTATE TKA SEL KNOB
385.00	386.11	1.11	2H 20 READ TKA SEL VALUE ON DIGITAL INDIC
387.50	388.27	0.77	2H 15 MON TKA SEL MODE LT GREEN - TKA SEL MODE ENGAGED
390.00			000048 FLIGHT INSTRUMENT SCAN -A2
390.00	420.00	30.00	2J 02 MON PITCH ATTITUDE INDIC
390.00	420.00	30.00	3L 02 MON VERTICAL SPEED INDIC
390.00	420.00	30.00	3A 10 MONITOR AIRSPEED INDIC
390.00	420.00	30.00	2K 14 MON MAP VIDEO
390.00	420.00	30.00	2K 48 MON STRAIGHT TREND VECTOR SYMBOL
390.00	420.00	30.00	2K 53 MON CURVED TREND VECTOR SYMBOLS
420.00			000049 FLIGHT INSTRUMENT SCAN -A2
420.00	450.00	30.00	2J 02 MON PITCH ATTITUDE INDIC
420.00	450.00	30.00	3L 02 MON VERTICAL SPEED INDIC
420.00	450.00	30.00	3A 10 MONITOR AIRSPEED INDIC
420.00	450.00	30.00	2K 14 MON MAP VIDEO
420.00	450.00	30.00	2K 48 MON STRAIGHT TREND VECTOR SYMBOL
420.00	450.00	30.00	2K 53 MON CURVED TREND VECTOR SYMBOLS

SINCE MISSION START BEGINNING	END	ACTIVITY TIME	EVENT/PROCEDURE TASK
185.00			000051 FLIGHT INSTRUMENT SCAN -A1
185.00	195.00	10.00	2J 02 MON PITCH ATTITUDE INDIC
185.00	195.00	10.00	3L 02 MON VERTICAL SPEED INDIC
185.00	195.00	10.00	3A 10 MONITOR AIRSPEED INDIC
185.00	195.00	10.00	2K 14 MON MAP VIDEO
185.00	195.00	10.00	2K 46 MON STRAIGHT TREND VECTOR SYMBOL
185.00	195.00	10.00	2K 33 MON CURVED TREND VECTOR SYMBOLS
195.00			160045 MON ADF/RMI-2
195.00			16XL01 VECTOR FOR DOWN WIND - OPTIONAL WX AVOIDANCE
195.00	196.00	1.00	1D10XX01 MON INFORMATION MANAGEMENT ATENSON
196.00	198.00	2.00	1D10XX02 MON INFORMATION MANAGEMENT DISPLAY [MODE-S UPLINK PNDG] AMBER
200.40	210.40	10.00	1D1FAA01 MONITOR UPLINK CALL-OUT FROM COPILOT
226.00	227.00	1.00	1D10XX01 MON INFORMATION MANAGEMENT ATENSON
227.00	229.00	2.00	1D10XX02 MON INFORMATION MANAGEMENT DISPLAY [MODE-S UPLINK PNDG] AMBER
231.40	241.40	10.00	1D10AL01 MONITOR COPILOT
243.00			16DL01 ARM NEW DL MCP ALT
243.00	243.78	0.78	2M 31 MON ALT ENG MODE LT BLUE - ALT ENG MODE PRESELECTED
243.80	244.86	1.06	2M 34 READ ALT ENG VALUE ON DIGITAL INDIC
244.86	246.28	1.42	2M 28 PRESS ALT ENG MODE S SW
246.28	247.06	0.78	2M 30 MON ALT ENG MODE LT ORANGE - ALT ENG MODE ARMED
240.00			16XL02 BEGIN TURN TO AVOID HEAVY WEATHER
240.00			16DL02 ENGAGE DATA LINKED HEADING IN MCP
240.00	240.77	0.77	2M 17 MON TKA SEL MODE LT BLUE - TKA SEL MODE PRESELECTED
240.80	241.91	1.11	2M 20 READ TKA SEL VALUE ON DIGITAL INDIC
241.90	243.31	1.41	2M 14 PRESS TKA SEL MODE SW
243.30	244.07	0.77	2M 15 MON TKA SEL MODE LT GREEN - TKA SEL MODE ENGAGED
210.00			16DL03 DESCEND THRU 11000.
210.00			000051 FLIGHT INSTRUMENT SCAN -A1

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SINCE MISSION START BEGINNING	END	ACTIVITY TIME	EVENT/PROCEDURE TASK		
210.00	220.00	10.00	2J	02	MON PITCH ATTITUDE INDIC
210.00	220.00	10.00	3L	02	MON VERTICAL SPEED INDIC
210.00	220.00	10.00	3A	10	MONITOR AIRSPEED INDIC
210.00	220.00	10.00	2K	14	MON MAP VIDEO
210.00	220.00	10.00	2K	46	MON STRAIGHT TREND VECTOR SYMBOL
210.00	220.00	10.00	2K	33	MON CURVED TREND VECTOR SYMBOLS
240.00			190092	TUNE ATL APPROACH ON 127.25	
240.00			19DL02	MONITOR ATL APPROACH ON 127.25/VHF-2L	
220.00			090048	FLIGHT INSTRUMENT SCAN -A2	
220.00	250.00	30.00	2J	02	MON PITCH ATTITUDE INDIC
220.00	250.00	30.00	3L	02	MON VERTICAL SPEED INDIC
220.00	250.00	30.00	3A	10	MONITOR AIRSPEED INDIC
220.00	250.00	30.00	2K	14	MON MAP VIDEO
220.00	250.00	30.00	2K	46	MON STRAIGHT TREND VECTOR SYMBOL
220.00	250.00	30.00	2K	33	MON CURVED TREND VECTOR SYMBOLS
255.00			00EV03	C/P EXT VIS SCAN	
270.00			00EV07	C/P EXT VIS SCAN	
250.00			090048	FLIGHT INSTRUMENT SCAN -A2	
250.00	280.00	30.00	2J	02	MON PITCH ATTITUDE INDIC
250.00	280.00	30.00	3L	02	MON VERTICAL SPEED INDIC
250.00	280.00	30.00	3A	10	MONITOR AIRSPEED INDIC
250.00	280.00	30.00	2K	14	MON MAP VIDEO
250.00	280.00	30.00	2K	46	MON STRAIGHT TREND VECTOR SYMBOL
250.00	280.00	30.00	2K	33	MON CURVED TREND VECTOR SYMBOLS
280.00			090048	FLIGHT INSTRUMENT SCAN -A2	
280.00	310.00	30.00	2J	02	MON PITCH ATTITUDE INDIC
280.00	310.00	30.00	3L	02	MON VERTICAL SPEED INDIC
280.00	310.00	30.00	3A	10	MONITOR AIRSPEED INDIC
280.00	310.00	30.00	2K	14	MON MAP VIDEO
280.00	310.00	30.00	2K	46	MON STRAIGHT TREND VECTOR SYMBOL
280.00	310.00	30.00	2K	33	MON CURVED TREND VECTOR SYMBOLS
310.00			090048	FLIGHT INSTRUMENT SCAN -A2	
310.00	340.00	30.00	2J	02	MON PITCH ATTITUDE INDIC
310.00	340.00	30.00	3L	02	MON VERTICAL SPEED INDIC
310.00	340.00	30.00	3A	10	MONITOR AIRSPEED INDIC
310.00	340.00	30.00	2K	14	MON MAP VIDEO
310.00	340.00	30.00	2K	46	MON STRAIGHT TREND VECTOR SYMBOL

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SINCE MISSION START        ACTIVITY                         EVENT/PROCEDURE
BEGINNING        END        TIME                                TASK
310.00      340.00            30.00                              2K     35   MON CURVED TREND
                                                                            VECTOR SYMBOLS

340.00                                                       090048   FLIGHT INSTRUMENT
                                                                      SCAN -A2

340.00      370.00            30.00                              2J     02   MON PITCH ATTITUDE
                                                                            INDIC

340.00      370.00            30.00                              3L     02   MON VERTICAL SPEED
                                                                            INDIC

340.00      370.00            30.00                              3A     10   MONITOR AIRSPEED
                                                                            INDIC

340.00      370.00            30.00                              2K     14   MON  MAP VIDEO
340.00      370.00            30.00                              2K     40   MON STRAIGHT TREND
                                                                            VECTOR SYMBOL

340.00      370.00            30.00                              2K     35   MON CURVED TREND
                                                                            VECTOR SYMBOLS

298.00                                                       030007   ENGINE INSTRUMENT
                                                                      SCAN

295.00                                                       00EV09   C/P EXT VIS SCAN
340.00                                                       00EV04   C/P EXT VIS SCAN
383.00                                                       030007   ENGINE INSTRUMENT
                                                                      SCAN

370.00                                                       10BL04   DESCEND THRU 6000.
370.00                                                       10XL04   ALTITUDE STEP DOWN
                                                                      AND VECTOR TO RESUME
                                                                      AFTER WX AVOIDANCE

379.00      380.00             1.00                            1D10XX01   MON INFORMATION
                                                                          MANAGEMENT
                                                                          ATENSON

380.00      382.00             2.00                            1D10XX02   MON INFORMATION
                                                                          MANAGEMENT DISPLAY
                                                                          (MODE-S UPLINK PNDG)
                                                                          AMBER

384.40      390.40             6.00                            1D10AL04   MON COPILOT - TURN
                                                                          LEFT HEADING 240.
                                                                          DESCEND AND MAIN-
                                                                          TAIN 6000 MSL.

390.00                                                       10DL01   ARM NEW
                                                                      DL MCP ALT

390.00      390.78             0.78                              2N     31   MON ALT ENG MODE LT
                                                                            BLUE - ALT ENG MODE
                                                                            PRESELECTED

390.80      391.80             1.00                              2N     34   READ ALT ENG VALUE
                                                                            ON DIGITAL INDIC

391.80      393.22             1.42                              2N     29   PRESS ALT ENG MODE S
                                                                            W

393.22      394.00             0.78                              2N     30   MON ALT ENG MODE LT
                                                                            ORANGE - ALT ENG
                                                                            MODE ARMED

390.00                                                       090048 , FLIGHT INSTRUMENT
                                                                      SCAN -A2

390.00      420.00            30.00                              2J     02   MON PITCH ATTITUDE
                                                                            INDIC

390.00      420.00            30.00                              3L     02   MON VERTICAL SPEED
                                                                            INDIC

390.00      420.00            30.00                              3A     10   MONITOR AIRSPEED
                                                                            INDIC

390.00      420.00            30.00                              2K     14   MON  MAP VIDEO
390.00      420.00            30.00                              2K     40   MON STRAIGHT TREND
                                                                            VECTOR SYMBOL

390.00      420.00            30.00                              2K     35   MON CURVED TREND
                                                                            VECTOR SYMBOLS

420.00                                                       090048   FLIGHT INSTRUMENT
                                                                      SCAN -A2

420.00      450.00            30.00                              2J     02   MON PITCH ATTITUDE
                                                                            INDIC

420.00      450.00            30.00                              3L     02   MON VERTICAL SPEED
                                                                            INDIC

420.00      450.00            30.00                              3A     10   MONITOR AIRSPEED
                                                                            INDIC

420.00      450.00            30.00                              2K     14   MON  MAP VIDEO
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SINCE MISSION START BEGINNING	END	ACTIVITY TIME	EVENT/PROCEDURE TASK		
420.00	450.00	30.00	2K	48	MON STRAIGHT TREND VECTOR SYMBOL
420.00	450.00	30.00	2K	53	MON CURVED TREND VECTOR SYMBOLS
340.00	360.00	20.00	8A	10	PILOT EXTERNAL VISION SCAN
363.00			030007	ENGINE INSTRUMENT SCAN	
363.00	363.44	0.44	7F	29	MON ENG NO 1 EPR IND
363.00	363.44	0.44	7F	30	MON ENG NO 2 EPR IND
363.44	363.88	0.44	7F	21	MON NO 1 ENG N1 IND
363.44	363.88	0.44	7F	22	MON NO 2 ENG N1 IND
363.88	364.32	0.44	7F	31	MON ENG NO 1 EXH GAS TEMP IND
363.88	364.32	0.44	7F	32	MON ENG NO 2 EXH GAS TEMP IND
364.32	364.76	0.44	7F	23	MON NO 1 ENG N2 IND
364.32	364.76	0.44	7F	24	MON NO 2 ENG N2 IND
364.76	365.20	0.44	7F	33	MON ENG NO 1 FUEL FLOW INDIC
364.76	365.20	0.44	7F	34	MON ENG NO 2 FUEL FLOW INDIC
365.20	365.64	0.44	7F	09	MON NO 1 ENG OIL PRESS INDIC
365.64	366.08	0.44	7F	10	MON NO 1 ENG OIL TEMP INDIC
365.64	366.08	0.44	7F	18	MON NO 2 ENG OIL TEMP INDIC
366.08	366.52	0.44	7F	11	MON NO 1 ENG OIL QTY INDIC
366.08	366.52	0.44	7F	19	MON NO 2 ENG OIL QTY INDIC
366.52	366.96	0.44	7F	12	MON NO 1 ENG VIBRATION AMPLITUDE INDIC
366.52	366.96	0.44	7F	20	MON NO 2 ENG VIBR AMPLITUDE INDIC
370.00			100L04	DESCEND THRU 8000.	

C-3

B.8 ILS APPROACH WITH WEATHER DEVIATION—ADVANCED FLIGHT DECK

Nonflying Pilot

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SINCE MISSION START BEGINNING	END	ACTIVITY TIME	EVENT/PROCEDURE TASK
195.00			000051 FLIGHT INSTRUMENT SCAN -A1
195.00			100048 HDG ADF/RMI-2
195.00	197.25	2.25	5E 25 HDG ADF NO.1 POINTER ON ADF/RMI INDIC
195.00			102891 VECTOR FOR DOWNWIND OPTIONAL WX AVOIDNC
195.00	207.00	12.00	1P102Z91 N 515,TURN RT HDG270 DESCND AND MAINTAIN 6000 FT.CONTACT ATL APPR ON 127.25.
207.00	214.00	7.00	1A 25 ACTUATE COMM 1 PUSH-TO-TALK SW
214.00	217.00	3.00	1A 25 ACTUATE COMM 1 PUSH-TO-TALK SW
207.00	217.00	10.00	1P102Y91 APPROACH,515 HAS STRONG WX RADAR ECHOES.REQUEST HDG 300.WILL ADVISE CLR.
220.00	232.00	12.00	1P10AA01 NASA 515, TURN RT. HDG 300, DESCEND AND MAINTAIN 6000 FT CONTACT ATL 127.25
232.00	239.00	7.00	1A 25 ACTUATE COMM 1 PUSH-TO-TALK SW
232.00	239.00	7.00	1P10BB01 515,ROGER,HDG 300, MAINTAIN 6000, APPR ON 127.25
240.00			100001 ENTER/ARM NEW ALT IN MCP
240.00			102L02 BEGIN TURN TO AVOID HEAVY WEATHER
235.00			100002 ENTER NEW HEADING IN MCP
210.00			102L03 DESCEND THRU 11000.
210.00			000001 FLIGHT INSTRUMENT SCAN -A1
240.00			100002 TUNE ATL APPROACH ON 127.25
240.00	244.00	4.00	1B 01 HDG VHF-1L FREQ IND
240.00	243.00	3.00	1B 02 SET VHF-1L FREQ-WHOLE NO.S
243.00	244.00	1.00	1B 03 SET VHF-1L FREQ - FRACTIONS

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SINCE MISSION START BEGINNING	END	ACTIVITY TIME	EVENT/PROCEDURE TASK
246.00			160003 CONTACT ATL APPROACH ON 127.25
246.00	247.40	1.40	1B 05 SET VHF-2 COMM TFR SW TO LEFT
246.40	251.90	5.50	1A 10 ACT PUSH-TO-TALK SW
246.40	251.90	5.50	1P162200 ATL APPR,NASA 515 DESCENDING TO 8000.
251.90	255.90	4.00	1P107700 NASA 515,ATL APPR, ROGER.
255.90			00EV00 C/P EXT VIS SCAN
255.90	270.90	15.00	56 10 PILOT EXTERNAL VISION SCAN
270.90			00EV03 C/P EXT VIS SCAN
270.90	285.90	15.00	56 10 PILOT EXTERNAL VISION SCAN
250.00			000040 FLIGHT INSTRUMENT SCAN -43
280.00			000040 FLIGHT INSTRUMENT SCAN -43
310.00			000041 FLIGHT INSTRUMENT SCAN -43
340.00			000040 FLIGHT INSTRUMENT SCAN -43
288.00			000007 ENGINE INSTRUMENT SCAN
288.00	288.44	0.44	77 25 MON ENG NO 1 EPR IND
288.00	288.44	0.44	77 26 MON ENG NO 2 EPR IND
288.44	288.88	0.44	77 21 MON NO 1 ENG N1 IND
288.44	288.88	0.44	77 22 MON NO 2 ENG N1 IND
288.88	289.32	0.44	77 31 MON ENG NO 1 EXH GAS TEMP IND
288.88	289.32	0.44	77 32 MON ENG NO 2 EXH GAS TEMP IND
289.32	289.76	0.44	77 23 MON N? 1 ENG N2 IND
289.32	289.76	0.44	77 24 MON NO 2 ENG N2 IND
289.76	290.20	0.44	77 55 MON ENG NO 1 FUEL FLOW INDIC
289.76	290.20	0.44	77 56 MON ENG NO 2 FUEL FLOW INDIC
290.20	290.64	0.44	77 06 MON NO 1 ENG OIL PRESS INDIC
290.64	291.08	0.44	77 10 MON NO 1 ENG OIL TEMP INDIC
290.64	291.08	0.44	77 10 MON NO 2 ENG OIL TEMP INDIC
291.08	291.52	0.44	77 11 MON NO 1 ENG OIL QTY INDIC
291.08	291.52	0.44	77 16 MON NO 2 ENG OIL QTY INDIC
291.52	291.96	0.44	77 12 MON NO 1 ENG VIBRA-TION AMPLITUDE INDIC
291.52	291.96	0.44	77 20 MON NO 2 ENG VIBR AMPLITUDE INDIC
295.90			00EV00 C/P EXT VIS SCAN
295.90	340.90	45.00	56 12 PILOT EXTERNAL VISION SCAN
340.90			00EV04 C/P EXT VIS SCAN
340.90	360.90	20.00	56 10 PILOT EXTERNAL VISION SCAN
383.00			000007 ENGINE INSTRUMENT SCAN
383.00	383.44	0.44	77 25 MON ENG NO 1 EPR IND
383.00	383.44	0.44	77 26 MON ENG NO 2 EPR IND
383.44	383.88	0.44	77 21 MON NO 1 ENG N1 IND
383.44	383.88	0.44	77 22 MON NO 2 ENG N1 IND

SINCE MISSION START BEGINNING	END	ACTIVITY TIME	EVENT/PROCEDURE TASK
383.88	384.32	0.44	7P 31 MON ENG NO 1 EXH GAS TEMP IND
383.88	384.32	0.44	7P 32 MON ENG NO 2 EXH GAS TEMP IND
384.32	384.76	0.44	7P 33 MON NO 1 ENG N2 IND
384.32	384.76	0.44	7P 34 MON NO 2 ENG N2 IND
384.76	385.20	0.44	7P 35 MON ENG NO 1 FUEL FLOW INDIC
384.76	385.20	0.44	7P 36 MON ENG NO 2 FUEL FLOW INDIC
385.20	385.64	0.44	7P 09 MON NO 1 ENG OIL PRESS INDIC
385.64	386.08	0.44	7P 10 MON NO 1 ENG OIL TEMP INDIC
385.64	386.08	0.44	7P 18 MON NO 2 ENG OIL TEMP INDIC
386.08	386.52	0.44	7P 11 MON NO 1 ENG OIL QTY INDIC
386.08	386.52	0.44	7P 19 MON NO 2 ENG OIL QTY INDIC
386.52	386.96	0.44	7P 12 MON NO 1 ENG VIBRATION AMPLITUDE INDIC
386.52	386.96	0.44	7P 20 MON NO 2 ENG VIBR AMPLITUDE INDIC
370.00			10EL04 DESCEND THRU 5000.
374.00			102B04 ALT STEP DOWN AND VECTOR TO REROUTE AFTER WX AVOIDANCE
370.00	373.00	3.00	1P10AA04 APPROACH, 515 IS CLEAR OF WEATHER
370.00	373.00	3.00	16 20 ACTIVATE COMM 2 PUSH-TO-TALK SW
374.00	381.00	7.00	1P10BB04 NASA 515, TURN LEFT HEADING 240,DESCEND AND MAINTAIN 5000 FT
381.00	384.00	3.00	16 20 ACTIVATE COMM 2 PUSH-TO-TALK SW
384.00	385.70	1.70	16 20 ACTIVATE COMM 2 PUSH-TO-TALK SW
381.00	386.00	5.00	1P10CC04 515, ROGER. TURN LT HDG 240,MAINTN 5000.
388.00			100001 ENTER/ARM NEW ALT IN MCP
388.00			100002 ENTER NEW HEADING IN MCP
390.00			000043 FLIGHT INSTRUMENT SCAN -43
420.00			000043 FLIGHT INSTRUMENT SCAN -43
450.00			000043 FLIGHT INSTRUMENT SCAN -43
480.00			000043 FLIGHT INSTRUMENT SCAN -43
510.00			000031 FLIGHT INSTRUMENT SCAN -31
390.00			00EV00 C/P EXT VIS SCAN
390.00	430.00	40.00	86 11 PILOT EXTERNAL VISION SCAN
430.00			000007 ENGINE INSTRUMENT SCAN
430.00	430.44	0.44	7P 25 MON ENG NO 1 EPR IND
430.00	430.44	0.44	7P 26 MON ENG NO 2 EPR IND
430.44	430.88	0.44	7P 21 MON NO 1 ENG N1 IND
430.44	430.88	0.44	7P 22 MON NO 2 ENG N1 IND
430.88	431.32	0.44	7P 31 MON ENG NO 1 EXH GAS TEMP IND
430.88	431.32	0.44	7P 32 MON ENG NO 2 EXH GAS TEMP IND

SINCE MISSION START BEGINNING	END	ACTIVITY TIME	EVENT/PROCEDURE TASK		
431.32	431.76	0.44	7F	23	MON NO 1 ENG N2 IND
431.32	431.76	0.44	7F	24	MON NO 2 ENG N2 IND
431.76	432.20	0.44	7F	33	MON ENG NO 1 FUEL FLOW INDIC
431.76	432.20	0.44	7F	34	MON ENG NO 2 FUEL FLOW INDIC
432.20	432.64	0.44	7F	09	MON NO 1 ENG OIL PRESS INDIC
432.64	433.08	0.44	7F	10	MON NO 1 ENG OIL TEMP INDIC
432.64	433.08	0.44	7F	10	MON NO 2 ENG OIL TEMP INDIC
433.08	433.52	0.44	7F	11	MON NO 1 ENG OIL QTY INDIC
433.08	433.52	0.44	7F	19	MON NO 2 ENG OIL QTY INDIC
433.52	433.96	0.44	7F	12	MON NO 1 ENG VIBRA-TION AMPLITUDE INDIC
433.52	433.96	0.44	7F	20	MON NO 2 ENG VIBR

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SINCE MISSION START            ACTIVITY                                   EVENT/PROCEDURE
BEGINNING        END           TIME                                           TASK
159.00                                                                    00EV05   C/P EXT VIS SCAN

 40.00         175.00           35.00                                         8A     11     PILOT       .NAL
                                                                                            VISION SCA.

185.00                                                                    000051   FLIGHT INSTRUMENT
                                                                                   SCAN -A1

194.00                                                                    100240   MON ADF/RMI-2

195.00         197.20            2.20                                         9E     38    MON ADF NO.1 POINTER
                                                                                           ON ADF/RMI 2 INDIC

195.00                                                                    102L01   VECTOR FOR DOWN
                                                                                   WIND - OPTIONAL
                                                                                   WX AVOIDANCE

195.00         196.00            1.00                                        10102201   MON INFORMATION
                                                                                        MANAGEMENT
                                                                                        ATTENTN

196.00         198.00            2.00                                        10102202   MON INFORMATION
                                                                                        MANAGEMENT DISPLAY
                                                                                        (MODE-S UPLINK PEND)
                                                                                        AMBER

198.00         200.40            1.00                                        12100001   LINE SELECT (ATC
                                                                                        UPLINKS PENDING)

200.40         210.40           10.00                                        10102201   READ  -TURN RT HDG
                                                                                        270,DESCEND AND MAIN-
                                                                                        TAIN 6000 FT,MONITOR
                                                                                        ATL APPR ON 127.25

210.40         212.20            1.00                                        12100030   LINE SELECT
                                                                                        (UNABLE)

212.20         214.00            1.00                                        12100024   LINE SELECT (STRONG
                                                                                        WX RADAR ECHOES)

214.00         215.00            1.00                                        12100014   LINE SELECT
                                                                                        (HEADING REQUEST)

215.00         217.00            1.30                                        12100033   PRESS KEY (3)
217.00         218.30            1.25                                        12100040   PRESS KEY (0)
218.30         219.40            1.20                                        12100040   PRESS KEY (0)
219.40         221.20            1.00                                        12100029   LINE SELECT (REQ TEN
                                                                                        HDG 333-WILL ADVISE)

226.00         227.00            1.00                                        10102201   MON INFORMATION
                                                                                        MANAGEMENT
                                                                                        ATTENTN

227.00         229.00            2.00                                        10102202   MON INFORMATION
                                                                                        MANAGEMENT DISPLAY
                                                                                        (MODE-S UPLINK PEND)
                                                                                        AMBER

229.00         231.40            1.00                                        12100001   LINE SELECT (ATC
                                                                                        UPLINKS PENDING)

231.40         241.40           10.00                                        10102L01   READ -TURN RT HDG
                                                                                        360, DESCEND AND
                                                                                        MAINTAIN 6000 MSL
                                                                                        MONITOR APPR 127.25

241.40         243.20            1.00                                        12100030   LINE SELECT
                                                                                        (UNABLE)

248.00                                                                    100L01   ARM NEW
                                                                                   SL REF ALT

249.00                                                                    102L02   BEGIN TURN TO AVOID
                                                                                   HEAVY WEATHER
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SINCE MISSION START BEGINNING	END	ACTIVITY TIME	EVENT/PROCEDURE TASK
240.00			100L02 ENGAGE DATA LINKED HEADING IN MCP
210.00			100L03 DESCEND THRU 11000.
210.00			000051 FLIGHT INSTRUMENT SCAN -41
240.00			100002 TUNE ATL APPROACH ON 127.25
240.00	244.00	4.00	10 01 MON VHF-2L FREQ IND
240.00	242.00	2.00	10 02 SET VHF-2L FREQ-WHOLE NO.S
242.00	243.00	1.00	10 03 SET VHF-2L FREQ - FRACTIONS
240.00			100L03 MONITOR ATL APPROACH ON 127.25/VHF-2L
246.00	247.40	1.40	10 05 SET VHF-2 COMM TFR SW TO LEFT
247.50	249.50	2.00	10 04 ADJ VHF-2 VOLUME
220.00			000040 FLIGHT INSTRUMENT SCAN -42
255.00			00EV03 C/P EXT VIS SCAN
255.00	270.00	15.00	0A 10 PILOT EXTERNAL VISION SCAN
270.00			00EV03 C/P EXT VIS SCAN
270.00	285.00	15.00	0A 10 PILOT EXTERNAL VISION SCAN
290.00			000040 FLIGHT INSTRUMENT SCAN -42
280.00			000040 FLIGHT INSTRUMENT SCAN -42
310.00			000040 FLIGHT INSTRUMENT SCAN -42
340.00			000040 FLIGHT INSTRUMENT SCAN -42
288.00			020007 ENGINE INSTRUMENT SCAN
288.00	288.44	0.44	7F 23 MON ENG NO 1 EPR IND
288.00	288.44	0.44	7F 30 MON ENG NO 2 EPR IND
288.44	288.88	0.44	7F 21 MON NO 1 ENG N1 IND
288.44	288.88	0.44	7F 22 MON NO 2 ENG N1 IND
288.88	289.32	0.44	7F 31 MON ENG NO 1 EXH GAS TEMP IND
288.88	289.32	0.44	7F 32 MON ENG NO 2 EXH GAS TEMP IND
289.32	289.76	0.44	7F 25 MON NO 1 ENG N2 IND
289.32	289.76	0.44	7F 26 MON NO 2 ENG N2 IND
289.76	290.20	0.44	7F 33 MON ENG NO 1 FUEL FLOW INDIC
289.76	290.20	0.44	7F 34 MON ENG NO 2 FUEL FLOW INDIC
290.20	290.64	0.44	7F 09 MON NO 1 ENG OIL PRESS INDIC
290.64	291.08	0.44	7F 10 MON NO 1 ENG OIL TEMP INDIC
290.64	291.08	0.44	7F 18 MON NO 2 ENG OIL TEMP INDIC
291.08	291.52	0.44	7F 11 MON NO 1 ENG OIL QTY INDIC
291.08	291.52	0.44	7F 19 MON NO 2 ENG OIL QTY INDIC
291.52	291.96	0.44	7F 12 MON NO 1 ENG VIBRATION AMPLITUDE INDIC
291.52	291.96	0.44	7F 20 MON NO 2 ENG VIBR AMPLITUDE INDIC
295.00			00EV08 C/P EXT VIS SCAN
295.00	340.00	45.00	0A 12 PILOT EXTERNAL VISION SCAN

SINCE MISSION START BEGINNING	END	ACTIVITY TIME	EVENT/PROCEDURE TASK
340.00			00EV04 C/P EXT VIS SCAN
340.00	360.00	20.00	8A 10 PILOT EXTERNAL VISION SCAN
363.00			030007 ENGINE INSTRUMENT SCAN
363.00	363.44	0.44	7F 25 MON ENG NO 1 EPR IND
363.00	363.44	0.44	7F 26 MON ENG NO 2 EPR IND
363.44	363.88	0.44	7F 21 MON NO 1 ENG N1 IND
363.44	363.88	0.44	7F 22 MON NO 2 ENG N1 IND
363.88	364.32	0.44	7F 31 MON ENG NO 1 EXH GAS TEMP IND
363.88	364.32	0.44	7F 32 MON ENG NO 2 EXH GAS TEMP IND
364.32	364.76	0.44	7F 23 MON NO 1 ENG N2 IND
364.32	364.76	0.44	7F 24 MON NO 2 ENG N2 IND
364.76	365.20	0.44	7F 33 MON ENG NO 1 FUEL FLOW INDIC
364.76	365.20	0.44	7F 34 MON ENG NO 2 FUEL FLOW INDIC
365.20	365.64	0.44	7F 09 MON NO 1 ENG OIL PRESS INDIC
365.64	366.08	0.44	7F 10 MON NO 1 ENG OIL TEMP INDIC
365.64	366.08	0.44	7F 18 MON NO 2 ENG OIL TEMP INDIC
366.08	366.52	0.44	7F 11 MON NO 1 ENG OIL QTY INDIC
366.08	366.52	0.44	7F 19 MON NO 2 ENG OIL QTY INDIC
366.52	366.96	0.44	7F 12 MON NO 1 ENG VIBRATION AMPLITUDE INDIC
366.52	366.96	0.44	7F 20 MON NO 2 ENG VIBR AMPLITUDE INDIC
370.00			100L04 DESCEND THRU 8000.
370.00			102L04 ALTITUDE STEP DOWN AND VECTOR TO RESUME AFTER WX AVOIDANCE
370.00	371.00	1.00	12100002 LINE SELECT (REQUEST FOR CLEARANCE)
371.00	372.00	1.00	12100020 LINE SELECT (RESUME ON-COURSE)
379.00	380.00	1.00	10102201 MON INFORMATION MANAGEMENT ATENDON
380.60	382.60	2.00	10102202 MON INFORMATION MANAGEMENT DISPLAY (MODE-S UPLINK PROG) AMBER
383.60	384.60	1.00	12100001 LINE SELECT (ATC UPLINKS PENDING)
384.60	390.60	6.00	10102L04 READ - TURN LEFT HEADING 340. DESCEND & MAINTAIN 8000 MSL.
390.60	392.20	1.60	12100036 LINE SELECT (UNABLE)
380.00			100L01 ARM DEV VL MCP ALT
390.00			000048 FLIGHT INSTRUMENT SCAN -A2
420.00			000048 FLIGHT INSTRUMENT SCAN -A2
450.00			000048 FLIGHT INSTRUMENT SCAN -A2
480.00			000048 FLIGHT INSTRUMENT SCAN -A2
510.00			000051 FLIGHT INSTRUMENT SCAN -A1

SINCE MISSION START BEGINNING	END	ACTIVITY TIME	EVENT/PROCEDURE TASK
390.00			000V04 C/P EXT VIS SCAN
390.00	430.00	40.00	5X 11 PILOT EXTERNAL VISION SCAN
430.00			000007 ENGINE INSTRUMENT SCAN
430.00	430.44	0.44	7F 25 MON ENG NO 1 EPR IND
430.00	430.44	0.44	7F 30 MON ENG NO 2 EPR IND
430.44	430.88	0.44	7F 21 MON NO 1 ENG N1 IND
430.44	430.88	0.44	7F 22 MON NO 2 ENG N1 IND
430.88	431.32	0.44	7F 31 MON ENG NO 1 EXH GAS TEMP IND
430.88	431.32	0.44	7F 32 MON ENG NO 2 EXH GAS TEMP IND
431.32	431.76	0.44	7F 23 MON NO 1 ENG N2 IND
431.32	431.76	0.44	7F 24 MON NO 2 ENG N2 IND
431.76	432.20	0.44	7F 33 MON ENG NO 1 FUEL FLOW INDIC
431.76	432.20	0.44	7F 34 MON ENG NO 2 FUEL FLOW INDIC
432.20	432.64	0.44	7F 09 MON NO 1 ENG OIL PRESS INDIC
432.64	433.08	0.44	7F 10 MON NO 1 ENG OIL TEMP INDIC
432.64	433.08	0.44	7F 16 MON NO 2 ENG OIL TEMP INDIC
433.08	433.52	0.44	7F 11 MON NO 1 ENG OIL QTY INDIC
433.08	433.52	0.44	7F 19 MON NO 2 ENG OIL QTY INDIC
433.52	433.96	0.44	7F 12 MON NO 1 ENG VIBRATION AMPLITUDE INDIC
433.52	433.96	0.44	7F 30 MON NO 2 ENG VIBR

B.9 ILS MISSED APPROACH WITH REROUTE–CONVENTIONAL FLIGHT DECK

Flying Pilot

SINCE MISSION START BEGINNING	END	ACTIVITY TIME	EVENT/PROCEDURE TASK
15.00			100002 LANDING CHECKL
847.00	847.80	0.80	1P 10 MONITOR CALL-OUT
847.80	848.20	0.40	1P 14 MONITOR CALL-OUT
850.00	850.70	0.70	1P 10 MONITOR CALL-OUT
851.00	852.30	1.30	1P100079 CALL OUT -[ARMED GREEN LIGHT]
854.50	855.20	0.70	1P 10 MONITOR CALL-OUT
855.20	856.20	1.00	1P 10 MONITOR CALL-OUT
858.20	858.60	0.40	1P 14 MONITOR CALL-OUT
858.60	859.70	1.10	1P 12 MONITOR CALL-OUT
850.00			00EV01 PILOT EXT VIS SCAN
850.00	855.00	5.00	8A 10 PILOT EXTERNAL VISION SCAN
865.00			10FB17 WINDSHEAR WARNING
865.00	875.00	10.00	1P10FB27 K 515,DC-8 3 MI AND REPTS ABRUPT WINDSHR AT 1500 FT ON FINAL 98L,MAX THRST REQ-D
890.00			10FB04 INITIATE GO-AROUND BY PILOT
890.41	893.71	3.30	1P10FB03 CALL-OUT (GOING AROUND NOW, SET FLAP 15, GEAR UP)
890.41	892.85	2.44	4B 09 ADVANCE THRUST LVRS TO TAKEOFF THRUST
892.00			10FB05 COPILOT GOAROUND ACTIVITIES
895.40	896.10	0.70	1P 10 MONITOR CALL-OUT
893.15	893.45	0.30	1P 15 MONITOR REPORT
897.80	899.80	2.00	1P C2 MONITOR CALL-OUT
882.00			13FB16 MISSED APPROACH AND HOLDING CLEARANCE
882.00	885.50	3.50	1P10FB22 RADIO COMM-ATL TWR, 515 IS EXECUTING A MISSED APPROACH
885.50	890.90	5.40	1P10FB08 RADIO-COMM (NASA 515 CLIMB RUNWAY HEADING TO 3000 , SAY YOUR INTENTIONS)
890.90	898.90	8.00	1P10FB23 515,ROGER.RW HDG TO 3000.REQST TO HOLD FOR 15 MINS TO ASSESS THE WX.
909.00	919.00	10.00	1P10FB24 NA 515,CLRD TO MACEY INT,TURN LT HDG 060. INTCPT/PROCEED VIA ANN RADIAL 322.CLIMB

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SINCE MISSION START BEGINNING	END	ACTIVITY TIME	EVENT/PROCEDURE TASK
919.00	929.00	10.00	1P10F825 AND MAINTAIN FL 180 HOLD N.E. OF MACEY AS PUBLISHED. EFC AT XXXX Z.
929.00	943.00	14.00	1P10F826 6.ROB.CLRD TO MACEY 080 TO AHN R-322.MNT FL 180.HOLD N E. OF MACEY AS PUBLSHD.EFC
883.00			140003 ALTITUDE CHANGE PROC
883.00	893.00	10.00	4A 29 ACT FLT CONTROL TO CHANGE ALT
883.00	893.00	10.00	3L 02 MON VERTICAL SPEED INDIC
883.00	883.77	0.77	3H 02 MON CORR BARO ALT INDIC
883.00	893.00	10.00	3R 10 MON PITCH ATTITUDE INDIC ON FDI
883.00	885.82	2.82	4B 03 ACTUATE BOTH THROTTLES
883.00	885.37	2.37	3F 01 MON MACH NO INDIC
893.00			140003 ALTITUDE CHANGE PROC
893.00	903.00	10.00	4A 29 ACT FLT CONTROL TO CHANGE ALT
893.00	903.00	10.00	3L 02 MON VERTICAL SPEED INDIC
893.00	893.77	0.77	3H 02 MON CORR BARO ALT INDIC
893.00	903.00	10.00	3R 10 MON PITCH ATTITUDE INDIC ON FDI
893.00	895.82	2.82	4B 03 ACTUATE BOTH THROTTLES
893.00	895.37	2.37	3F 01 MON MACH NO INDIC
903.00			140003 ALTITUDE CHANGE PROC
903.00	913.00	10.00	4A 29 ACT FLT CONTROL TO CHANGE ALT
903.00	913.00	10.00	3L 02 MON VERTICAL SPEED INDIC
903.00	903.77	0.77	3H 02 MON CORR BARO ALT INDIC
903.00	913.00	10.00	3R 10 MON PITCH ATTITUDE INDIC ON FDI
903.00	905.82	2.82	4B 03 ACTUATE BOTH THROTTLES
903.00	905.37	2.37	3F 01 MON MACH NO INDIC
913.00			140003 ALTITUDE CHANGE PROC
913.00	923.00	10.00	4A 29 ACT FLT CONTROL TO CHANGE ALT
913.00	923.00	10.00	3L 02 MON VERTICAL SPEED INDIC
913.00	913.77	0.77	3H 02 MON CORR BARO ALT INDIC
913.00	923.00	10.00	3R 10 MON PITCH ATTITUDE INDIC ON FDI
913.00	915.82	2.82	4B 03 ACTUATE BOTH THROTTLES
913.00	915.37	2.37	3F 01 MON MACH NO INDIC
923.00			140003 ALTITUDE CHANGE PROC
923.00	933.00	10.00	4A 29 ACT FLT CONTROL TO CHANGE ALT
923.00	933.00	10.00	3L 02 MON VERTICAL SPEED INDIC
923.00	923.77	0.77	3H 02 MON CORR BARO ALT INDIC
923.00	933.00	10.00	3R 10 MON PITCH ATTITUDE INDIC ON FDI
923.00	925.82	2.82	4B 03 ACTUATE BOTH THROTTLES
923.00	925.37	2.37	3F 01 MON MACH NO INDIC

```
SINCE MISSION START          ACTIVITY                                      EVENT/PROCEDURE
BEGINNING        END         TIME                                              TASK
902.00                                                                     10FB07   P/CP GOAROUND
                                                                                    COMMUNICATIONS
902.00         906.50           4.50
                                                                              1P10FB10  CALL-OUT (SET FLAPS
                                                                                        5 REPORT 3000 REPORT
                                                                                        170 KNOTS)
902.00
                                                                           10FB08   CP FLAP SET AND
                                                                                    CALLOUTS
907.00         907.70           0.70                                         1P    07    MONITOR REPORT
910.80         911.50           0.70                                         1P    07    MONITOR REPORT
912.80         913.50           0.70                                         1P100050    CALL OUT -[FLAPS 1]
919.50         920.20           0.70                                         1P    07    MONITOR REPORT
923.00         923.70           0.70                                         1P10FB20    CALL OUT [FLAPS UP]
928.50         929.20           0.70                                         1P    07    MONITOR REPORT
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SINCE MISSION START BEGINNING	END	ACTIVITY TIME	EVENT/PROCEDURE TASK
5.00			180002 LANDING CHECKL'
847.00	847.00	0.00	1P 10 MONITOR C...-OUT
847.60	848.00	0.40	1P 14 MONITOR CALL-OUT
850.00	850.70	0.70	1P 10 MONITOR CALL-OUT
851.00	852.30	1.30	1P180079 CALL OUT -(ARMED - GREEN LIGHT)
854.50	855.20	0.70	1P 10 MONITOR CALL-OUT
855.20	856.20	1.00	1P 10 MONITOR CALL-OUT
856.20	856.60	0.40	1P 14 MONITOR CALL-OUT
858.60	859.70	1.10	1P 12 MONITOR CALL-OUT
860.00			[illegible]
860.00	865.00	5.00	8A 10 PILOT EXTERNAL VISION SCAN
865.00			16DL02 WINDSHEAR WARNING (FROM DC-9 AHEAD)
865.00	866.00	1.00	1D16ZZ01 MON INFORMATION MANAGEMENT MASTER AURAL
866.00	868.00	2.00	1D16ZZ09 MON INFORMATION MANAGEMENT DISPLAY (MODE-S UPLINK PWDG) GREEN REVERSE VIDEO
870.40	870.40	0.00	1D16ZY02 MONITOR COPILOT
880.00			16FB04 INITIATE GO-AROUND BY PILOT
880.41	883.71	3.30	1P16FB03 CALL-OUT (GOING AROUND NOW, SET FLAP 15, GEAR UP)
880.41	882.85	2.44	4B 06 ADVANCE THRUST LVRS TO TAKEOFF THRUST
882.00			16FB05 COPILOT GOAROUND ACTIVITIES
885.40	886.10	0.70	1P 10 MONITOR CALL-OUT
893.15	893.45	0.30	1P 18 MONITOR REPORT
897.00	899.00	2.00	1P 02 MONITOR CALL-OUT
882.00			15YL01 MISSED APPROACH CALL AND REQUEST FOR HOLDING
897.00	898.00	1.00	1D16ZZ01 MON INFORMATION MANAGEMENT MASTER AURAL
898.00	900.00	2.00	1D16ZZ02 MON INFORMATION MANAGEMENT DISPLAY (MODE-S UPLINK PWDG) GREEN
928.40	938.40	10.00	1D16AL01 MON COPILOT
938.40	948.40	10.00	1D16AL02 MON COPILOT
883.00			140002 ALTITUDE CHANGE PROC
883.00	893.00	10.00	4A 29 ACT FLT CONTROL TO CHANGE ALT
883.00	893.00	10.00	3L 02 MON VERTICAL SPEED INDIC
883.00	883.77	0.77	3M 02 MON CORR BARO ALT INDIC
883.00	893.00	10.00	3R 10 MON PITCH ATTITUDE INDIC ON FDI
883.00	885.82	2.82	4B 03 ACTUATE BOTH THROTTLES
883.00	885.37	2.37	2F 01 MON MACH NO INDIC
893.00			140003 ALTITUDE CHANGE PROC
893.00	903.00	10.00	4A 29 ACT FLT CONTROL TO CHANGE ALT
893.00	903.00	10.00	3L 02 MON VERTICAL SPEED INDIC

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SINCE MISSION START BEGINNING	END	ACTIVITY TIME	EVENT/PROCEDURE TASK		
893.00	893.77	0.77	3H	02	MON CORR BARO ALT INDIC
893.00	903.00	10.00	3R	10	MON PITCH ATTITUDE INDIC ON FDI
893.00	895.82	2.82	4B	03	ACTUATE BOTH THROTTLES
893.00	895.37	2.37	3F	01	MON MACH NO INDIC
903.00			140003		ALTITUDE CHANGE PROC
903.00	913.00	10.00	4A	29	ACT FLT CONTROL TO CHANGE ALT
903.00	913.00	10.00	3L	02	MON VERTICAL SPEED INDIC
903.00	903.77	0.77	3H	02	MON CORR BARO ALT INDIC
903.00	913.00	10.00	3R	10	MON PITCH ATTITUDE INDIC ON FDI
903.00	905.82	2.82	4B	03	ACTUATE BOTH THROTTLES
903.00	905.37	2.37	3F	01	MON MACH NO INDIC
913.00			140003		ALTITUDE CHANGE PROC
913.00	923.00	10.00	4A	29	ACT FLT CONTROL TO CHANGE ALT
913.00	923.00	10.00	3L	02	MON VERTICAL SPEED INDIC
913.00	913.77	0.77	3H	02	MON CORR BARO ALT INDIC
913.00	923.00	10.00	3R	10	MON PITCH ATTITUDE INDIC ON FDI
913.00	915.82	2.82	4B	03	ACTUATE BOTH THROTTLES
913.00	915.37	2.37	3F	01	MON MACH NO INDIC
923.00			140003		ALTITUDE CHANGE PROC
923.00	933.00	10.00	4A	29	ACT FLT CONTROL TO CHANGE ALT
923.00	933.00	10.00	3L	02	MON VERTICAL SPEED INDIC
923.00	923.77	0.77	3H	02	MON CORR BARO ALT INDIC
923.00	933.00	10.00	3R	10	MON PITCH ATTITUDE INDIC ON FDI
923.00	925.82	2.82	4B	03	ACTUATE BOTH THROTTLES
923.00	925.37	2.37	3F	01	MON MACH NO INDIC
899.00			16F807		P/CP GOAROUND COMMUNICATIONS
899.00	903.50	4.50	1P16F810		CALL-OUT (SET FLAPS 5 REPORT 3000 REPORT 170 KNOTS)
899.00			16F808		CP FLAP SET AND CALLOUTS
904.00	904.70	0.70	1P	07	MONITOR REPORT
[illegible]	910.59	0.70	1P	07	MONITOR REPORT
909.89	910.59	0.70	1P16F856		CALL OUT -(FLAPS 1)
916.50	917.20	0.70	1P	07	MONITOR REPORT
920.00	920.70	0.70	1P16F826		CALL OUT (FLAPS UP)
925.50	926.20	0.70	1P	07	MONITOR REPORT

B.10 ILS MISSED APPROACH WITH REROUTE–CONVENTIONAL FLIGHT DECK

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SINCE MISSION START BEGINNING	END	ACTIVITY TIME	EVENT/PROCEDURE TASK
45.00			100082 LANDING CHECKL
845.00	846.00	1.00	8B000001 READ NEXT ..EM ON CHECKLIST ON CONTROL COLUMN PLACARD
847.00	847.60	0.60	1P100076 CALL OUT -[RECALL]
847.60	848.00	0.40	1P100077 CALL OUT -[CHECKED]
848.00	849.00	1.00	8B000001 READ NEXT ITEM ON CHECKLIST ON CONTROL COLUMN PLACARD
850.00	850.70	0.70	1P100078 CALL OUT -[SPEED BRAKES]
851.00	852.30	1.30	1P 02 MONITOR CALL-OUT
852.50	853.50	1.00	8B000001 READ NEXT ITEM ON CHECKLIST ON CONTROL COLUMN PLACARD
854.50	855.20	0.70	1P100080 CALL OUT -[LANDING GEAR]
855.20	856.20	1.00	1P100081 CALL OUT -[DOWN, THREE GREEN]
856.20	857.20	1.00	8B000001 READ NEXT ITEM ON CHECKLIST ON CONTROL COLUMN PLACARD
858.20	858.60	0.40	1P100082 CALL OUT -[FLAPS]
858.60	859.70	1.10	1P100083 CALL OUT -[FIFTEEN GREEN LIGHT]
861.10	862.20	1.10	1P100084 CALL OUT -[CHECKLIST COMPLETE]
861.10	862.20	1.10	1P 12 MONITOR CALL-OUT
860.00			00EV21 PILOT EXT VIS SCAN
865.00			10FB17 WINDSHEAR WARNING
865.00	875.00	10.00	1P10FB27 N 515,DC-9 3 MI AHD REPTS ABRUPT WINDSHR AT 1500 FT ON FINAL 08L.MAX THRST REQ-D
875.00	877.00	2.00	1P10FB28 515, ROGER WINDSHEAR
880.00			10FB04 INITIATE GO-AROUND BY PILOT
880.41	883.61	3.20	1P 15 MONITOR CALL-OUT
882.00			10FB05 COPILOT GOAROUND ACTIVITIES
882.00	882.77	0.77	3H 02 MON CORR BARO ALT INDIC
882.00	882.76	0.76	7F 27 MON ENG NO 1 EPR BUG
882.00	882.76	0.76	7F 29 MON ENG NO 2 EPR BUG
882.00	892.00	10.00	3A 10 MONITOR AIRSPEED INDIC
882.00	882.20	0.20	7G 40 MON MASTER CAUTION AND OVHD ANNUN LTS ON
883.40	885.42	2.02	4E 15 MONITOR FLAP POSITION INDICATOR
885.40	886.40	1.00	1P10FB04 CALL-OUT (FLAPS 15)
887.40	890.46	3.06	4D 01 SET LNDG GEAR LVR TO UP POSITION
887.40	887.94	0.54	4D 07 MONITOR NOSE GEAR UNLOCKED LT ON
887.40	887.94	0.54	4D 11 MON LEFT/RT GEAR UNLOCKED LT ON
890.46	893.19	2.73	4B 07 MAKE MINOR THRUST ADJUSTMENT
893.15	894.55	1.40	1P10FB05 CALL-OUT (BUG + 15)
897.80	898.34	0.54	4D 08 MON NOSE GEAR UNLOCKED LT OFF
897.80	898.34	0.54	4D 12 MON LEFT/RT GEAR UNLOCKED LT OFF

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SINCE MISSION START BEGINNING	END	ACTIVITY TIME	EVENT/PROCEDURE TASK
897.00	899.00	2.00	1P10FB06 CALL-OUT (GEAR UP, OFF)
892.00			10FB10 MISSED APPROACH AND HOLDING CLEARANCE
885.50	890.90	5.40	1P10FB08 RADIO-COMM (NASA 515 CLIMB RUNWAY HEADING TO 3000 , SAY YOUR INTENTIONS)
909.00	919.00	10.00	1P10FB24 NA 515,CLRD TO MACEY INT,TURN LT HDG 060, INTCPT/PROCEED VIA ANN RADIAL 322,CLIMB
919.00	929.00	10.00	1P10FB25 AND MAINTAIN FL 180. HOLD N.E. OF MACEY AS PUBLISHED, EFC AT XXXX Z.
922.00	929.00	7.00	1P10FB30 COPILOT WRITES DOWN CLEARANCE TO MACEY
883.00			140003 ALTITUDE CHANGE PROC
893.00			140003 ALTITUDE CHANGE PROC
903.00			140003 ALTITUDE CHANGE PROC
913.00			140003 ALTITUDE CHANGE PROC
923.00			140003 ALTITUDE CHANGE PROC
902.00			10FB07 P/CP GOAROUND COMMUNICATIONS
902.00	906.50	4.50	1P 18 MONITOR CALL OUT
902.00			10FB08 CP FLAP SET AND CALLOUTS
902.00	904.69	2.69	4E 09 SET FLAP CONT LEVER TO FLAPS 5
904.69	906.92	2.23	4E 15 MONITOR FLAP POSITION INDICATOR
906.92	907.72	0.80	1P10FB11 CALL-OUT (FLAPS 5)
907.08	909.81	2.73	4B 07 MAKE MINOR THRUST ADJUSTMENT
909.81	911.83	2.02	7F 25 MON ENG NO 1 EPR IND
909.81	911.83	2.02	7F 30 MON ENG NO 2 EPR IND
911.89	918.89	7.00	2H 06 MON ALTIMETER
918.89	919.69	0.80	1P10FB12 CALL-OUT (3000)
912.89	913.59	0.70	1P 07 MONITOR REPORT
914.00	916.69	2.69	4E 07 SET FLAP CONT LEVER TO FLAPS 1
917.00	919.23	2.23	4E 15 MONITOR FLAP POSITION INDICATOR
919.50	920.20	0.70	1P100058 CALL OUT -(FLAPS 1)
920.50	922.52	2.02	7F 25 MON ENG NO 1 EPR IND
920.50	922.52	2.02	7F 30 MON ENG NO 2 EPR IND
923.00	923.70	0.70	1P 07 MONITOR REPORT
924.00	925.98	1.98	4E 08 SET FLAP CONT LEVER TO FLAPS 0
926.00	928.23	2.23	4E 15 MONITOR FLAP POSITION INDICATOR
928.50	929.20	0.70	1P10FB29 CALL OUT (FLAPS UP)

SINCE MISSION START BEGINNING	END	ACTIVITY TIME	EVENT/PROCEDURE TASK
45.00			160002 LANDING CHECKL
845.00	846.00	1.00	8D090001 READ NEXT ..EM ON CHECKLIST ON CONTROL COLUMN PLACARD
847.00	847.60	0.60	1P160076 CALL OUT -[RECALL]
847.60	848.00	0.40	1P160077 CALL OUT -[CHECKED]
848.00	849.00	1.00	8D090001 READ NEXT ITEM ON CHECKLIST ON CONTROL COLUMN PLACARD
850.00	850.70	0.70	1P160078 CALL OUT -[SPEED BRAKES]
851.00	852.30	1.30	1P 82 MONITOR CALL-OUT
852.50	853.50	1.00	8D090001 READ NEXT ITEM ON CHECKLIST ON CONTROL COLUMN PLACARD
854.50	855.20	0.70	1P160080 CALL OUT -[LANDING GEAR]
855.20	856.20	1.00	1P160081 CALL OUT -[DOWN, THREE GREEN]
856.20	857.20	1.00	8D090001 READ NEXT ITEM ON CHECKLIST ON CONTROL COLUMN PLACARD
858.20	858.60	0.40	1P160082 CALL OUT -[FLAPS]
858.60	859.70	1.10	1P160083 CALL OUT -[FIFTEEN GREEN LIGHT]
861.10	862.20	1.10	1P160084 CALL OUT -[CHECKLIST COMPLETE]
861.10	862.20	1.10	1P 12 MONITOR CALL-OUT
850.00			00EV21 PILOT EXT VIS SCAN
865.00			16DL62 WINDSHEAR WARNING (FROM DC-9 AHEAD)
865.00	866.60	1.60	1D16XX01 MON INFORMATION MANAGEMENT MASTER AURAL
866.60	868.60	2.00	1D16XX09 MON INFORMATION MANAGEMENT DISPLAY [MODE-S UPLINK PNDG] GREEN REVERSE VIDEO
868.60	870.40	1.80	1X160001 LINE SELECT [ATC UPLINKS PENDING]

SINCE MISSION START		ACTIVITY TIME	EVENT/PROCEDURE TASK
BEGINNING	END		
870.40	878.40	8.00	1D10XX02 READ-XXXX Z.DC-9 REPTS ABRUPT WINDSHR AT 1500 FT ON FINAL 09L,MAX THRUST REQ-D
878.40	880.20	1.80	1X100045 LINE SELECT (ACKNOWLEDGE)
880.00			10FB04 INITIATE GO-AROUND BY PILOT
880.41	883.61	3.20	1P 15 MONITOR CALL-OUT
882.00			10FB05 COPILOT GOAROUND ACTIVITIES
882.00	882.77	0.77	3H 02 MON CORR BARO ALT INDIC
882.00	882.76	0.76	7F 27 MON ENG NO 1 EPR BUG
882.00	882.76	0.76	7F 28 MON ENG NO 2 EPR BUG
882.00	892.00	10.00	3A 10 MONITOR AIRSPEED INDIC
882.00	882.20	0.20	7G 40 MON MASTER CAUTION AND OVHD ANNUN LTS ON
883.40	885.42	2.02	4E 15 MONITOR FLAP POSITION INDICATOR
885.40	886.40	1.00	1P10FB04 CALL-OUT (FLAPS 15)
887.40	890.40	3.00	4D 01 SET LNDG GEAR LVR TO UP POSITION
887.40	887.94	0.54	4D 07 MONITOR NOSE GEAR UNLOCKED LT ON
887.40	887.94	0.54	4D 11 MON LEFT/RT GEAR UNLOCKED LT ON
890.40	893.13	2.73	4B 07 MAKE MINOR THRUST ADJUSTMENT
893.13	894.53	1.40	1P10FB05 CALL-OUT (BUG + 15)
897.80	898.34	0.54	4D 08 MON NOSE GEAR UNLOCKED LT OFF
897.80	898.34	0.54	4D 12 MON LEFT/RT GEAR UNLOCKED LT OFF
897.80	899.80	2.00	1P10FB06 CALL-OUT (GEAR UP, OFF)
882.00			15YL01 MISSED APPROACH CALL AND REQUEST FOR HOLDING
882.00	883.80	1.80	1X100002 LINE SELECT [REQUEST FOR CLEARANCE]
883.80	885.60	1.80	1X100018 LINE SELECT [MAKING MISSED APPROACH]
885.60	886.80	1.20	1X100031 PRESS KEY [1]
886.80	888.00	1.20	1X100044 PRESS [ENT]
888.00	889.20	1.20	1X100035 PRESS KEY [5]
889.20	890.40	1.20	1X100044 PRESS [ENT]
890.40	892.20	1.80	1X100023 LINE SELECT [ENTER HOLDING FOR XX MIN]
897.00	898.80	1.80	1D10XX01 MON INFORMATION MANAGEMENT MASTER AURAL
898.80	900.80	2.00	1D10XX02 MON INFORMATION MANAGEMENT DISPLAY [MODE-S UPLINK PNDG] GREEN
926.60	928.40	1.80	1X100001 LINE SELECT [ATC UPLINKS PENDING]
928.40	938.40	10.00	1D10XL01 READ-CLRD TO MACEY INT,TURN LT HDG 060, INTCPT AND PROCEED VIA ANN R-022.CLIMB
938.40	948.40	10.00	1D10XL02 AND MAINTAIN FL180, HOLD NE OF MACEY AS PUBLSHD, EFC XXXX Z.
948.40	950.20	1.80	1X100041 LINE SELECT [WILCO]
950.20	952.00	1.80	1X100047 LINE SELECT [PRINT MESSAGE]

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SINCE MISSION START          ACTIVITY                                 EVENT/PROCEDURE
BEGINNING       END          TIME                                         TASK
                                                                      140003   ALTITUDE CHANGE PROC
883.00
                                                                      140003   ALTITUDE CHANGE PROC
893.00
                                                                      140003   ALTITUDE CHANGE PROC
903.00
                                                                      140003   ALTITUDE CHANGE PROC
913.00
                                                                      140003   ALTITUDE CHANGE PROC
923.00
                                                                      16FB07   P/CP GOAROUND
899.00                                                                         COMMUNICATIONS

                                                                         1P    19   MONITOR CALL OUT
899.00       903.50           4.50
                                                                      16FB09   CP FLAP SET AND
899.00                                                                         CALLOUTS

                                                                         4E    09   SET FLAP CONT LEVER
899.00       901.89           2.89                                              TO FLAPS 5

                                                                         4E    15   MONITOR FLAP -
901.69       903.92           2.23                                             POSITION INDICATOR

                                                                         1P16FB11   CALL-OUT (FLAPS 5)
903.92       904.72           0.80
                                                                         4B    07   MAKE MINOR THRUST
904.08       906.81           2.73                                             ADJUSTMENT

                                                                         7F    25   MON ENG NO 1 EPR IND
906.81       908.83           2.02
                                                                         7F    30   MON ENG NO 2 EPR IND
906.81       908.83           2.02
                                                                         3H    06   MON ALTIMETER
908.83       915.83           7.00
                                                                         1P16FB12   CALL-OUT (3000)
915.83       916.63           0.80
                                                                         1P    07   MONITOR REPORT
909.89       910.59           0.70
                                                                         4E    07   SET FLAP CONT LEVER
911.00       913.89           2.89                                             TO FLAPS 1

                                                                         4E    15   MONITOR FLAP
914.00       916.23           2.23                                             POSITION INDICATOR

                                                                         1P160058   CALL OUT -(FLAPS 1)
916.50       917.20           0.70
                                                                         7F    25   MON ENG NO 1 EPR IND
917.50       919.52           2.02
                                                                         7F    30   MON ENG NO 2 EPR IND
917.50       919.52           2.02
                                                                         1P    07   MONITOR REPORT
920.00       920.70           0.70
                                                                         4E    06   SET FLAP CONT LEVER
921.00       922.99           1.99                                             TO FLAPS  0

                                                                         4E    15   MONITOR FLAP
923.00       925.23           2.23                                             POSITION INDICATOR

                                                                         1P16FB29   CALL OUT (FLAPS UP)
925.50       926.20           0.70
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B.11 ILS MISSED APPROACH WITH REROUTE–ADVANCED FLIGHT DECK

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SINCE MISSION START BEGINNING	END	ACTIVITY TIME	EVENT/PROCEDURE TASK
46.00			180082 LANDING CHECKL
847.00	847.80	0.80	1P 10 MONITOR CALL-OUT
847.60	848.00	0.40	1P 14 MONITOR CALL-OUT
850.00	850.70	0.70	1P 10 MONITOR CALL-OUT
851.00	852.30	1.30	1P180079 CALL OUT -(ARMED - GREEN LIGHT)
854.50	855.20	0.70	1P 10 MONITOR CALL-OUT
855.20	856.20	1.00	1P 10 MONITOR CALL-OUT
858.20	858.60	0.40	1P 14 MONITOR CALL-OUT
858.60	859.70	1.10	1P 12 MONITOR CALL-OUT
850.00			180071 FLIGHT INSTRUMENT SCAN -A2, PILOT
850.00	880.00	30.00	2K 14 MON MAP VIDEO
850.00	880.00	30.00	2K 46 MON STRAIGHT TREND VECTOR SYMBOL
850.00	880.00	30.00	2K 33 MON CURVED TREND VECTOR SYMBOLS
850.00	880.00	30.00	2J 13 MON ILS BOX INDIC
850.00	880.00	30.00	2J 04 MON FLT PATH ACCEL INDIC
850.00	880.00	30.00	2J 01 MON ROLL ATT INDIC
850.00	880.00	30.00	2J 10 MON PITCH REF INDIC
850.00	880.00	30.00	3A 10 MONITOR AIRSPEED INDIC
865.00			00EV02 C/P EXT VIS SCAN
865.00			18FB17 WINDSHEAR WARNING
865.00	875.00	10.00	1P18FB27 N 515,DC-9 3 MI AND REPTS ABRUPT WINDSHR AT 1500 FT ON FINAL 88L,MAX THRST REQ-D
880.00			18YL01 INITIATE GO-AROUND
880.00	883.30	3.30	1P18FB03 CALL-OUT (GOING AROUND NOW, SET FLAP 15, GEAR UP)
880.00	882.50	2.50	4B 09 PRESS THROTTLE GO-AROUND SWITCHES
882.00			18FB05 COPILOT GOAROUND ACTIVITIES
885.40	886.10	0.70	1P 10 MONITOR CALL-OUT
893.15	893.45	0.30	1P 18 MONITOR REPORT

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SINCE MISSION START          ACTIVITY                                  EVENT/PROCEDURE
BEGINNING        END         TIME                                         TASK
887.00          889.00           2.00                                      1P      02   MONITOR CALL-OUT
882.00                                                                   10FB10    MISSED APPROACH AND
                                                                                   HOLDING CLEARANCE
882.00          885.50           3.50                                      1P10FB22   RADIO COMM-ATL
                                                                                     TWR, 515 IS
                                                                                     EXECUTING A MISSED
                                                                                     APPROACH
885.50          890.90           5.40                                      1P10FB09   RADIO-COMM (NASA 515
                                                                                     CLIMB RUNWAY HEADING
                                                                                     TO 3000 , SAY
                                                                                     YOUR INTENTIONS)
890.90          898.90           8.00                                      1P10FB23   515,ROGER.RW HDG TO
                                                                                     3000.REQST TO HOLD
                                                                                     FOR 15 MINS TO
                                                                                     ASSESS THE WX.
909.00          919.00          10.00                                      1P10FB24   NA 515.CLRD TO MACEY
                                                                                     INT,TURN LT HDG 060.
                                                                                     INTCPT/PROCEED VIA
                                                                                     AHN RADIAL 322.CLIMB
919.00          929.00          10.00                                      1P10FB25   AND MAINTAIN FL 180.
                                                                                     HOLD N.E. OF MACEY
                                                                                     AS PUBLISHED, EFC AT
                                                                                     XXXX Z.
929.00          943.00          14.00                                      1P10FB26   5,ROG.CLRD TO MACEY
                                                                                     060 TO AHN R-322.MNT
                                                                                     FL 180,HOLD N.E. OF
                                                                                     MACEY AS PUBLSHD.EFC
883.00                                                                  140003   ALTITUDE CHANGE PROC
883.00          893.00          10.00                                      4A      29   ACT FLT CONTROL TO
                                                                                      CHANGE ALT
883.00          893.00          10.00                                      3L      02   MON VERTICAL SPEED
                                                                                      INDIC
883.00          883.77           0.77                                      3N      02   MON CORR BARO ALT
                                                                                      INDIC
883.00          893.00          10.00                                      3R      10   MON PITCH ATTITUDE
                                                                                      INDIC ON FDI
883.00          885.82           2.82                                      4B      03   ACTUATE BOTH
                                                                                      THROTTLES
883.00          885.37           2.37                                      3F      01   MON MACH NO INDIC
893.00                                                                  140003   ALTITUDE CHANGE PROC
893.00          903.00          10.00                                      4A      29   ACT FLT CONTROL TO
                                                                                      CHANGE ALT
893.00          903.00          10.00                                      3L      02   MON VERTICAL SPEED
                                                                                      INDIC
893.00          893.77           0.77                                      3N      02   MON CORR BARO ALT
                                                                                      INDIC
893.00          903.00          10.00                                      3R      10   MON PITCH ATTITUDE
                                                                                      INDIC ON FDI
893.00          895.82           2.82                                      4B      03   ACTUATE BOTH
                                                                                      THROTTLES
893.00          895.37           2.37                                      3F      01   MON MACH NO INDIC
902.00                                                                  10FB07   P/CP GOAROUND
                                                                                 COMMUNICATIONS
902.00          906.50           4.50                                      1P10FB10   CALL-OUT (SET FLAPS
                                                                                     5 REPORT 3000 REPORT
                                                                                     170 KNOTS)
902.00                                                                  10FB08   CP FLAP SET AND
                                                                                 CALLOUTS
907.00          907.70           0.70                                      1P      07   MONITOR REPORT
918.89          919.59           0.70                                      1P      07   MONITOR REPORT
912.89          913.59           0.70                                      1P100058   CALL OUT -(FLAPS 1)
919.50          920.20           0.70                                      1P      07   MONITOR REPORT
923.00          923.70           0.70                                      1P10FB29   CALL OUT (FLAPS UP)
928.50          929.20           0.70                                      1P      07   MONITOR REPORT
903.00                                                                  140003   ALTITUDE CHANGE PROC
903.00          913.00          10.00                                      4A      29   ACT FLT CONTROL TO
                                                                                      CHANGE ALT
903.00          913.00          10.00                                      3L      02   MON VERTICAL SPEED
                                                                                      INDIC
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SINCE MISSION START		ACTIVITY TIME	EVENT/PROCEDURE TASK		
BEGINNING	END				
903.00	903.77	0.77	3H	02	MON CORR BARO ALT INDIC
903.00	913.00	10.00	3R	10	MON PITCH ATTITUDE INDIC ON FDI
903.00	905.82	2.82	4B	03	ACTUATE BOTH THROTTLES
903.00	905.37	2.37	3F	01	MON MACH NO INDIC
913.00			140003	ALTITUDE CHANGE PROC	
913.00	923.00	10.00	4A	29	ACT FLT CONTROL TO CHANGE ALT
913.00	923.00	10.00	3L	02	MON VERTICAL SPEED INDIC
913.00	913.77	0.77	3H	02	MON CORR BARO ALT INDIC
913.00	923.00	10.00	3R	10	MON PITCH ATTITUDE INDIC ON FDI
913.00	915.82	2.82	4B	03	ACTUATE BOTH THROTTLES
913.00	915.37	2.37	3F	01	MON MACH NO INDIC
923.00			140003	ALTITUDE CHANGE PROC	
923.00	933.00	10.00	4A	29	ACT FLT CONTROL TO CHANGE ALT
923.00	933.00	10.00	3L	02	MON VERTICAL SPEED INDIC
923.00	923.77	0.77	3H	02	MON CORR BARO ALT INDIC
923.00	933.00	10.00	3R	10	MON PITCH ATTITUDE INDIC ON FDI
923.00	925.82	2.82	4B	03	ACTUATE BOTH THROTTLES
923.00	925.37	2.37	3F	01	MON MACH NO INDIC
930.00			19YB01	ENTER ROUTE TO MACEY IN FLIGHT MANAGEMENT COMPUTER	
987.55	992.55	5.00	2K	59	MON MAP VIDEO - NEW ROUTE APPEARS AS A DASHED LINE
993.90	995.90	2.00	2K	60	MON MAP VIDEO - NEW ROUTE APPEARS AS A SOLID LINE
995.90	997.27	1.37	2H	35	PRESS HOR PATH MODE SW
997.27	998.05	0.78	2H	36	MON HOR PATH MODE LT GREEN - HOR PATH MODE ENGAGED
998.07	999.43	1.36	2H	39	PRESS VERT PATH MODE SW
999.43	1000.21	0.78	2H	40	MON VERT PATH MODE L GREEN - VERT PATH MODE ENGAGED
933.00			140003	ALTITUDE CHANGE PROC	
933.00	943.00	10.00	4A	29	ACT FLT CONTROL TO CHANGE ALT
933.00	943.00	10.00	3L	02	MON VERTICAL SPEED INDIC
933.00	933.77	0.77	3H	02	MON CORR BARO ALT INDIC
933.00	943.00	10.00	3R	10	MON PITCH ATTITUDE INDIC ON FDI
933.00	935.82	2.82	4B	03	ACTUATE BOTH THROTTLES
933.00	935.37	2.37	3F	01	MON MACH NO INDIC
943.00			140003	ALTITUDE CHANGE PROC	
943.00	953.00	10.00	4A	29	ACT FLT CONTROL TO CHANGE ALT
943.00	953.00	10.00	3L	02	MON VERTICAL SPEED INDIC
943.00	943.77	0.77	3H	02	MON CORR BARO ALT INDIC

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SINCE MISSION START          ACTIVITY                                 EVENT/PROCEDURE
BEGINNING        END         TIME                                       TASK
943.00        953.00         10.00                                      3R    10   MON PITCH ATTITUDE
                                                                                  INDIC ON FDI

943.00        945.82          2.82                                      4B    03   ACTUATE BOTH
                                                                                  THROTTLES

943.00        945.37          2.37                                      3F    01   MON MACH NO INDIC
953.00                                                               140003   ALTITUDE CHANGE PROC
953.00        963.00         10.00                                      4A    29   ACT FLT CONTROL TO
                                                                                  CHANGE ALT

953.00        963.00         10.00                                      3L    02   MON VERTICAL SPEED
                                                                                  INDIC

953.00        953.77          0.77                                      3H    02   MON CORR BARO ALT
                                                                                  INDIC

953.00        963.00         10.00                                      3R    10   MON PITCH ATTITUDE
                                                                                  INDIC ON FDI

953.00        955.82          2.82                                      4B    03   ACTUATE BOTH
                                                                                  THROTTLES

953.00        955.37          2.37                                      3F    01   MON MACH NO INDIC
963.00                                                               140003   ALTITUDE CHANGE PROC
963.00        973.00         10.00                                      4A    29   ACT FLT CONTROL TO
                                                                                  CHANGE ALT

963.00        973.00         10.00                                      3L    02   MON VERTICAL SPEED
                                                                                  INDIC

963.00        963.77          0.77                                      3H    02   MON CORR BARO ALT
                                                                                  INDIC

963.00        973.00         10.00                                      3R    10   MON PITCH ATTITUDE
                                                                                  INDIC ON FDI

963.00        965.82          2.82                                      4B    03   ACTUATE BOTH
                                                                                  THROTTLES

963.00        965.37          2.37                                      3F    01   MON MACH NO INDIC
973.00                                                               140003   ALTITUDE CHANGE PROC
973.00        983.00         10.00                                      4A    29   ACT FLT CONTROL TO
                                                                                  CHANGE ALT

973.00        983.00         10.00                                      3L    02   MON VERTICAL SPEED
                                                                                  INDIC

973.00        973.77          0.77                                      3H    02   MON CORR BARO ALT
                                                                                  INDIC

973.00        983.00         10.00                                      3R    10   MON PITCH ATTITUDE
                                                                                  INDIC ON FDI

973.00        975.82          2.82                                      4B    03   ACTUATE BOTH
                                                                                  THROTTLES

973.00        975.37          2.37                                      3F    01   MON MACH NO INDIC
983.00                                                               140003   ALTITUDE CHANGE PROC
983.00        993.00         10.00                                      4A    29   ACT FLT CONTROL TO
                                                                                  CHANGE ALT

983.00        993.00         10.00                                      3L    02   MON VERTICAL SPEED
                                                                                  INDIC

983.00        983.77          0.77                                      3H    02   MON CORR BARO ALT
                                                                                  INDIC

983.00        993.00         10.00                                      3R    10   MON PITCH ATTITUDE
                                                                                  INDIC ON FDI

983.00        985.82          2.82                                      4B    03   ACTUATE BOTH
                                                                                  THROTTLES

983.00        985.37          2.37                                      3F    01   MON MACH NO INDIC
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SINCE MISSION START		ACTIVITY	EVENT/PROCEDURE
BEGINNING	END	TIME	TASK
845.00			180082 LANDING CHECKLI
847.00	847.60	0.60	1P 10 MONITOR OUT
847.60	848.00	0.40	1P 14 MONITOR CALL-OUT
850.00	850.70	0.70	1P 10 MONITOR CALL-OUT
851.00	852.30	1.30	1P180079 CALL OUT -[ARMED - GREEN LIGHT]
854.50	855.20	0.70	1P 10 MONITOR CALL-OUT
855.20	856.20	1.00	1P 10 MONITOR CALL-OUT
858.20	858.60	0.40	1P 14 MONITOR CALL-OUT
858.60	859.70	1.10	1P 12 MONITOR CALL-OUT
850.00			180071 FLIGHT INSTRUMENT SCAN -A2, PILOT
850.00	880.00	30.00	2K 14 MON MAP VIDEO
850.00	880.00	30.00	2K 48 MON STRAIGHT TREND VECTOR SYMBOL
850.00	880.00	30.00	2K 33 MON CURVED TREND VECTOR SYMBOLS
850.00	880.00	30.00	2J 13 MON ILS BOX INDIC
850.00	880.00	30.00	2J 04 MON FLT PATH ACCEL INDIC
850.00	880.00	30.00	2J 01 MON ROLL ATT INDIC
850.00	880.00	30.00	2J 19 MON PITCH REF INDIC
850.00	880.00	30.00	3A 10 MONITOR AIRSPEED INDIC
865.00			00EV02 C/P EXT VIS SCAN
865.00			18DL02 WINDSHEAR WARNING (FROM DC-9 AHEAD)
865.00	866.00	1.00	1D18XX01 MON INFORMATION MANAGEMENT ATENSON
866.60	868.60	2.00	1D18XX09 MON INFORMATION MANAGEMENT DISPLAY [MODE-S UPLINK PNDG] RED
870.40	876.40	6.00	1D18XY02 MONITOR COPILOT
880.00			18YL01 INITIATE GO-AROUND
880.00	883.30	3.30	1P18FB03 CALL-OUT (GOING AROUND NOW, SET FLAP 15, GEAR UP)
880.00	882.50	2.50	4B 09 PRESS THROTTLE GO-AROUND SWITCHES

SINCE MISSION START BEGINNING	END	ACTIVITY TIME	EVENT/PROCEDURE TASK
882.00			10FB05 COPILOT GOAROUND ACTIVITIES
885.40	886.10	0.70	1P 10 MONITOR CALL-OUT
883.15	883.45	0.30	1P 10 MONITOR REPORT
887.00	889.00	2.00	1P 02 MONITOR CALL-OUT
882.00			10TL01 MISSED APPROACH CALL AND REQUEST FOR HOLDING
887.00	888.00	1.00	1D10XX01 MON INFORMATION MANAGEMENT ATENSON
898.00	900.00	2.00	1D10XX02 MON INFORMATION MANAGEMENT DISPLAY (MODE-S UPLINK PNDG) AMBER
920.40	930.40	10.00	1D10AL01 MON COPILOT
920.40	930.40	10.00	2K 59 MON MAP VIDEO - NEW ROUTE APPEARS AS A DASHED LINE
938.40	948.40	10.00	1D10AL02 MON COPILOT
950.00	952.06	2.06	3L 19 MON LINE 6 MESSAGE (TEMP F-PLN UPDATED)
952.00	953.42	1.42	3L 21 PRESS EXEC KEY
953.50	955.50	2.00	2K 60 MON MAP VIDEO - NEW ROUTE APPEARS AS A SOLID LINE
955.50	956.87	1.37	2H 35 PRESS HOR PATH MODE SW
956.90	957.60	0.70	2H 36 MON HOR PATH MODE LT GREEN - HOR PATH MODE ENGAGED
957.70	959.06	1.36	2H 39 PRESS VERT PATH MODE SW
959.10	959.80	0.70	2H 40 MON VERT PATH MODE L GREEN - VERT PATH MODE ENGAGED
883.00			140003 ALTITUDE CHANGE PROC
883.00	893.00	10.00	4A 29 ACT FLT CONTROL TO CHANGE ALT
883.00	893.00	10.00	3L 02 MON VERTICAL SPEED INDIC
883.00	883.77	0.77	3H 02 MON CORR BARO ALT INDIC
883.00	893.00	10.00	3R 10 MON PITCH ATTITUDE INDIC ON FDI
883.00	885.82	2.82	4B 03 ACTUATE BOTH THROTTLES
883.00	885.37	2.37	3F 01 MON MACH NO INDIC
893.00			140003 ALTITUDE CHANGE PROC
893.00	903.00	10.00	4A 29 ACT FLT CONTROL TO CHANGE ALT
893.00	903.00	10.00	3L 02 MON VERTICAL SPEED INDIC
893.00	893.77	0.77	3H 02 MON CORR BARO ALT INDIC
893.00	903.00	10.00	3R 10 MON PITCH ATTITUDE INDIC ON FDI
893.00	895.82	2.82	4B 03 ACTUATE BOTH THROTTLES
893.00	895.37	2.37	3F 01 MON MACH NO INDIC
899.00			10FB07 P/CP GOAROUND COMMUNICATIONS
899.00	903.50	4.50	1P10FB10 CALL-OUT (SET FLAPS 5 REPORT 3000 REPORT 170 KNOTS)
899.00			10FB08 CP FLAP SET AND CALLOUTS
904.00	904.70	0.70	1P 07 MONITOR REPORT
915.80	916.50	0.70	1P 07 MONITOR REPORT

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OF POOR QUALITY

SINCE MISSION START BEGINNING	END	ACTIVITY TIME	EVENT/PROCEDURE TASK		
909.30	910.00	0.70	1P100058		CALL OUT -[FLAPS 1]
916.50	917.20	0.70	1P	07	MONITOR REPORT
920.00	920.70	0.70	1P10FB29		CALL OUT [FLAPS UP]
925.50	926.20	0.70	1P	07	MONITOR REPORT
903.00			140003		ALTITUDE CHANGE PROC
903.00	913.00	10.00	4A	29	ACT FLT CONTROL TO CHANGE ALT
903.00	913.00	10.00	3L	02	MON VERTICAL SPEED INDIC
903.00	903.77	0.77	3H	02	MON CORR BARO ALT INDIC
903.00	913.00	10.00	3R	10	MON PITCH ATTITUDE INDIC ON FDI
903.00	905.82	2.82	4B	03	ACTUATE BOTH THROTTLES
903.00	905.37	2.37	3F	01	MON MACH NO INDIC
913.00			140003		ALTITUDE CHANGE PROC
913.00	923.00	10.00	4A	29	ACT FLT CONTROL TO CHANGE ALT
913.00	923.00	10.00	3L	02	MON VERTICAL SPEED INDIC
913.00	913.77	0.77	3H	02	MON CORR BARO ALT INDIC
913.00	923.00	10.00	3R	10	MON PITCH ATTITUDE INDIC ON FDI
913.00	915.82	2.82	4B	03	ACTUATE BOTH THROTTLES
913.00	915.37	2.37	3F	01	MON MACH NO INDIC
923.00			140003		ALTITUDE CHANGE PROC
923.00	933.00	10.00	4A	29	ACT FLT CONTROL TO CHANGE ALT
923.00	933.00	10.00	3L	02	MON VERTICAL SPEED INDIC
923.00	923.77	0.77	3H	02	MON CORR BARO ALT INDIC
923.00	933.00	10.00	3R	10	MON PITCH ATTITUDE INDIC ON FDI
923.00	925.82	2.82	4B	03	ACTUATE BOTH THROTTLES
923.00	925.37	2.37	3F	01	MON MACH NO INDIC
940.00			140003		ALTITUDE CHANGE PROC
940.00	950.00	10.00	4A	29	ACT FLT CONTROL TO CHANGE ALT
940.00	950.00	10.00	3L	02	MON VERTICAL SPEED INDIC
940.00	940.77	0.77	3H	02	MON CORR BARO ALT INDIC
940.00	950.00	10.00	3R	10	MON PITCH ATTITUDE INDIC ON FDI
940.00	942.82	2.82	4B	03	ACTUATE BOTH THROTTLES
940.00	942.37	2.37	3F	01	MON MACH NO INDIC
960.00			180073		FLIGHT INSTRUMENT SCAN -A1, COPILOT
970.00			080048		FLIGHT INSTRUMENT SCAN -A2
970.00	1000.00	30.00	2J	02	MON PITCH ATTITUDE INDIC
970.00	1000.00	30.00	3L	02	MON VERTICAL SPEED INDIC
970.00	1000.00	30.00	3A	10	MONITOR AIRSPEED INDIC
970.00	1000.00	30.00	2K	14	MON MAP VIDEO
970.00	1000.00	30.00	2K	46	MON STRAIGHT TREND VECTOR SYMBOL
970.00	1000.00	30.00	2K	33	MON CURVED TREND VECTOR SYMBOLS
970.00			180073		FLIGHT INSTRUMENT SCAN -A1, COPILOT
980.00			180073		FLIGHT INSTRUMENT SCAN -A1, COPILOT
990.00			180073		FLIGHT INSTRUMENT SCAN -A1, COPILOT

B.12 ILS MISSED APPROACH WITH REROUTE—ADVANCED FLIGHT DECK

Nonflying Pilot

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SINCE MISSION START BEGINNING	END	ACTIVITY TIME	EVENT/PROCEDURE TASK
45.00			160062 LANDING CHECKL
845.00	846.00	1.00	8B000001 READ NEXT .:EM ON CHECKLIST ON CONTROL COLUMN PLACARD
847.00	847.60	0.60	1P160076 CALL OUT -[RECALL]
847.60	848.00	0.40	1P160077 CALL OUT -[CHECKED]
848.00	849.00	1.00	8B000001 READ NEXT ITEM ON CHECKLIST ON CONTROL COLUMN PLACARD
850.00	850.70	0.70	1P160078 CALL OUT -[SPEED BRAKES]
851.00	852.30	1.30	1P 02 MONITOR CALL-OUT
852.50	853.50	1.00	8B000001 READ NEXT ITEM ON CHECKLIST ON CONTROL COLUMN PLACARD
854.50	855.20	0.70	1P160080 CALL OUT -[LANDING GEAR]
855.20	856.20	1.00	1P160081 CALL OUT -[DOWN, THREE GREEN]
856.20	857.20	1.00	8B000001 READ NEXT ITEM ON CHECKLIST ON CONTROL COLUMN PLACARD
858.20	858.60	0.40	1P160082 CALL OUT -[FLAPS]
858.60	859.70	1.10	1P160083 CALL OUT -[FIFTEEN GREEN LIGHT]
861.10	862.20	1.10	1P160084 CALL OUT -[CHECKLIST COMPLETE]
861.10	862.20	1.10	1P 12 MONITOR CALL-OUT
850.00			160071 FLIGHT INSTRUMENT SCAN -A2, PILOT
865.00			06EV02 C/P EXT VIS SCAN
865.00	875.00	10.00	6A 10 PILOT EXTERNAL VISION SCAN
865.00			16FB17 WINDSHEAR WARNING
865.00	875.00	10.00	1P16FB27 N 515,DC-9 3 MI AHD REPTS ABRUPT WINDSHR AT 1500 FT ON FINAL 06L,MAX THRST REQ-D
875.00	877.00	2.00	1P16FB28 515, ROGER WINDSHEAR
880.00			16TL01 INITIATE GO-AROUND
880.00	883.20	3.20	1P 15 MONITOR CALL-OUT
882.00			16FB05 COPILOT GOAROUND ACTIVITIES
882.00	882.77	0.77	3H 02 MON CORR BARO ALT INDIC
882.00	882.76	0.76	7F 27 MON ENG NO 1 EPR BUG
882.00	882.76	0.76	7F 28 MON ENG NO 2 EPR BUG
882.00	892.00	10.00	3A 10 MONITOR AIRSPEED INDIC
882.00	882.20	0.20	7G 40 MON MASTER CAUTION AND OVHD ANNUN LTS ON
883.40	885.42	2.02	4E 15 MONITOR FLAP POSITION INDICATOR
885.40	886.40	1.00	1P16FB04 CALL-OUT (FLAPS 15)
887.40	890.46	3.06	4D 01 SET LNDG GEAR LVR TO UP POSITION
887.40	887.94	0.54	4D 07 MONITOR NOSE GEAR UNLOCKED LT ON
887.40	887.94	0.54	4D 11 MON LEFT/RT GEAR UNLOCKED LT ON
890.46	893.19	2.73	43 07 MAKE MINOR THRUST ADJUSTMENT

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SINCE MISSION START		ACTIVITY TIME	EVENT/PROCEDURE TASK
BEGINNING	END		
893.15	894.55	1.40	1P10FB05 CALL-OUT (BUG + 15)
897.80	898.34	0.54	4D 08 MON NOSE GEAR UNLOCKED LT OFF
897.80	898.34	0.54	4D 12 MON LEFT/RT GEAR UNLOCKED LT OFF
897.80	899.80	2.00	1P10FB06 CALL-OUT (GEAR UP, OFF)
892.00			10FB16 MISSED APPROACH AND HOLDING CLEARANCE
895.50	900.90	5.40	1P10FB08 RADIO-COMM (NASA 515 CLIMB RUNWAY HEADING TO 3000 , SAY YOUR INTENTIONS)
909.00	919.00	10.00	1P10FB24 NA 515,CLRD TO MACEY INT,TURN LT HDG 080, INTCPT/PROCEED VIA AHN RADIAL 322.CLIMB
919.00	929.00	10.00	1P10FB25 AND MAINTAIN FL 180. HOLD N.E. OF MACEY AS PUBLISHED, EFC AT XXXX Z.
922.00	929.00	7.00	1P10FB30 COPILOT WRITES DOWN CLEARANCE TO MACEY
883.00			140003 ALTITUDE CHANGE PROC
893.00			140003 ALTITUDE CHANGE PROC
902.00			10FB07 P/CP GOAROUND COMMUNICATIONS
902.00	906.50	4.50	17 19 MONITOR CALL OUT
902.00			10FB09 CP FLAP SET AND CALLOUTS
902.00	904.69	2.69	4E 09 SET FLAP CONT LEVER TO FLAPS 5
904.69	906.92	2.23	4E 15 MONITOR FLAP POSITION INDICATOR
906.92	907.72	0.80	1P10FB11 CALL-OUT (FLAPS 5)
907.08	909.81	2.73	4B 07 MAKE MINOR THRUST ADJUSTMENT
909.81	911.83	2.02	7F 25 MON ENG NO 1 EPR IND
909.81	911.83	2.02	7F 30 MON ENG NO 2 EPR IND
911.89	918.89	7.00	3H 08 MON ALTIMETER
918.89	919.69	0.80	1P10FB12 CALL-OUT (3000)
912.89	913.59	0.70	1P 07 MONITOR REPORT
914.00	916.89	2.89	4E 07 SET FLAP CONT LEVER TO FLAPS 1
917.00	919.23	2.23	4E 15 MONITOR FLAP POSITION INDICATOR
919.50	920.20	0.70	1P100038 CALL OUT -[FLAPS 1]
920.50	922.52	2.02	7F 25 MON ENG NO 1 EPR IND
920.50	922.52	2.02	7F 30 MON ENG NO 2 EPR IND
923.00	923.70	0.70	1P 07 MONITOR REPORT
924.00	925.98	1.98	4E 06 SET FLAP CONT LEVER TO FLAPS 0
926.00	928.23	2.23	4E 15 MONITOR FLAP POSITION INDICATOR
928.50	929.20	0.70	1P10FB29 CALL OUT [FLAPS UP]
903.00			140003 ALTITUDE CHANGE PROC
913.00			140003 ALTITUDE CHANGE PROC
923.00			140003 ALTITUDE CHANGE PROC
930.00			10YB01 ENTER ROUTE TO MACEY IN FLIGHT MANAGEMENT COMPUTER
930.00	931.35	1.35	2L 37 PRESS A/WPT KEY
931.35	932.70	1.35	2L 44 PRESS N/RTE KEY
932.70	934.05	1.35	2L 50 PRESS N KEY
934.05	935.40	1.35	2L 28 PRESS NO.3 KEY

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SINCE MISSION START BEGINNING	END	ACTIVITY TIME	EVENT/PROCEDURE	TASK	
935.40	936.75	1.35	2L	27	PRESS NO.2 KEY
936.75	938.10	1.35	2L	27	PRESS NO.2 KEY
938.10	939.45	1.35	2L	36	PRESS . (DECIMAL PT) KEY
939.45	940.80	1.35	2L	26	PRESS NO.1 KEY
940.80	942.15	1.35	2L	27	PRESS NO.2 KEY
942.15	943.95	1.80	2L	70	LINE SELECT ANN323/12 FROM SCRATCH PAD TO [RTE LEGS] PAGE AFTER KATL.
943.95	945.95	2.00	2L	71	OBSERVE ANN01 WAYPOINT INSERTED ON [RTE LEGS] PAGE.
945.95	947.75	1.80	2L	72	LINE SELECT ANN01 TO SCRATCH PAD FROM [RTE LEGS] PAGE
947.75	949.55	1.80	2L	73	LINE SELECT ANN01 FROM SCRATCH PAD TO [DIRECT TO] PROMPT.
949.55	950.90	1.35	2L	49	PRESS M/GS KEY
950.90	952.25	1.35	2L	37	PRESS A/WPT KEY
952.25	953.60	1.35	2L	39	PRESS C KEY
953.60	954.95	1.35	2L	41	PRESS E KEY
954.95	956.30	1.35	2L	61	PRESS Y KEY
956.30	957.65	1.35	2L	36	PRESS . (DECIMAL PT) KEY
957.65	959.00	1.35	2L	26	PRESS NO.1 KEY
959.00	960.35	1.35	2L	33	PRESS NO.8 KEY
960.35	961.70	1.35	2L	35	PRESS NO.0 KEY
961.70	963.05	1.35	2L	35	PRESS NO.0 KEY
963.05	964.40	1.35	2L	35	PRESS NO.0 KEY
964.40	966.20	1.80	2L	74	LINE SELECT MACEY/18000 FROM SCRATCH PAD TO [THEN] PROMPT
966.20	968.00	1.80	2L	75	LINE SELECT MACEY TO SCRATCH PAD FROM [RTE LEGS] PAGE
968.00	970.00	2.00	2L	76	PRESS [HOLD] KEY
970.00	971.80	1.80	2L	77	LINE SELECT MACEY FROM SCRATCH PAD TO [HOLD AT] PROMPT
971.80	973.15	1.35	2L	42	PRESS F/P-L KEY
973.15	974.50	1.35	2L	48	PRESS L KEY
974.50	975.85	1.35	2L	26	PRESS NO.1 KEY
975.85	977.20	1.35	2L	33	PRESS NO.8 KEY
977.20	978.55	1.35	2L	35	PRESS NO.0 KEY
978.55	980.35	1.80	2L	78	LINE SELECT FL180 FROM SCRATCH PAD TO [TGT ALT] PROMPT.
980.35	981.70	1.35	2L	26	PRESS NO.1 KEY
981.70	983.05	1.35	2L	27	PRESS NO.2 KEY
983.05	984 40	1.35	2L	28	PRESS NO.3 KEY
984.40	985.75	1.35	2L	29	PRESS NO.4 KEY
985.75	987.55	1.80	2L	79	LINE SELECT 1234 FROM SCRATCH PAD TO [EFC TIME] PROMPT.
987.55	992.55	5.00	2K	59	MON MAP VIDEO - NEW ROUTE APPEARS AS A DASHED LINE
992.55	993.90	1.35	2L	21	PRESS EXEC KEY
993.90	995.90	2.00	2K	60	MON MAP VIDEO - NEW ROUTE APPEARS AS A SOLID LINE
933.00			140003		ALTITUDE CHANGE PROC
943.00			140003		ALTITUDE CHANGE PROC
953.00			140003		ALTITUDE CHANGE PROC
963.00			140003		ALTITUDE CHANGE PROC
973.00			140003		ALTITUDE CHANGE PROC
983.00			140003		ALTITUDE CHANGE PROC

SINCE MISSION START BEGINNING	END	ACTIVITY TIME	EVENT/PROCEDURE TASK
845.00			180062 LANDING CHECKLIST
45.00	846.00	1.00	8B090001 READ NEX[illegible]M ON CHECKLIST [illegible] CONTROL COLUMN PLACARD
847.00	847.60	0.60	1P180076 CALL OUT -[RECALL]
847.60	848.00	0.40	1P180077 CALL OUT -[CHECKED]
848.00	849.00	1.00	8B090001 READ NEXT ITEM ON CHECKLIST ON CONTROL COLUMN PLACARD
850.00	850.70	0.70	1P180078 CALL OUT -[SPEED BRAKES]
851.00	852.30	1.30	1P 02 MONITOR CALL-OUT
852.50	853.50	1.00	8B090001 READ NEXT ITEM ON CHECKLIST ON CONTROL COLUMN PLACARD
854.50	855.20	0.70	1P180080 CALL OUT -[LANDING GEAR]
855.20	856.20	1.00	1P180081 CALL OUT -[DOWN, THREE GREEN]
856.20	857.20	1.00	8B090001 READ NEXT ITEM ON CHECKLIST ON CONTROL COLUMN PLACARD
858.20	858.60	0.40	1P180082 CALL OUT -[FLAPS]
858.60	859.70	1.10	1P180083 CALL OUT -[FIFTEEN GREEN LIGHT]
861.10	862.20	1.10	1P180084 CALL OUT -[CHECKLIST COMPLETE]
861.10	862.20	1.10	1P 12 MONITOR CALL-OUT
860.00			180071 FLIGHT INSTRUMENT SCAN -A2, PILOT
865.00			00EV02 C/P EXT VIS SCAN
865.00	875.00	10.00	8A 10 PILOT EXTERNAL VISION SCAN
865.00			18DL02 WINDSHEAR WARNING (FROM DC-9 AHEAD)
865.00	866.60	1.60	1D18XX01 MON INFORMATION MANAGEMENT ATENSON
866.60	868.60	2.00	1D18XX09 MON INFORMATION MANAGEMENT DISPLAY [MODE-S UPLINK PNDG] RED
868.60	870.40	1.80	1A1800[illegible] LINE SELECT [ATC UPLINKS PENDING]

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SINCE MISSION START BEGINNING	END	ACTIVITY TIME	EVENT/PROCEDURE TASK	
870.40	878.40	8.00	1D10XX02	READ-XXXX Z,DC-9 REPTS ABRUPT WINDSHR AT 1500 FT ON FINAL 08L,MAX THRUST REQ-D
878.40	880.20	1.80	1X100045	LINE SELECT [ACKNOWLEDGE]
880.00			10YL01	INITIATE GO-AROUND
880.00	883.20	3.20	1P 15	MONITOR CALL-OUT
882.00			10FB06	COPILOT GOAROUND ACTIVITIES
882.00	882.77	0.77	3H 02	MON CORR BARO ALT INDIC
882.00	882.78	0.78	7F 27	MON ENG NO 1 EPR BUG
882.00	882.78	0.78	7F 29	MON ENG NO 2 EPR BUG
882.00	892.00	10.00	3A 10	MONITOR AIRSPEED INDIC
882.00	882.20	0.20	7G 40	MON MASTER CAUTION AND OVHD ANNUN LTS ON
883.40	885.42	2.02	4E 15	MONITOR FLAP POSITION INDICATOR
885.40	886.40	1.00	1P10FB04	CALL-OUT (FLAPS 15)
887.40	890.46	3.06	4D 01	SET LNDG GEAR LVR TO UP POSITION
887.40	887.94	0.54	4D 07	MONITOR NOSE GEAR UNLOCKED LT ON
887.40	887.94	0.54	4D 11	MON LEFT/RT GEAR UNLOCKED LT ON
890.46	893.19	2.73	4B 07	MAKE MINOR THRUST ADJUSTMENT
893.15	894.55	1.40	1P10FB05	CALL-OUT (BUG + 15)
897.80	898.34	0.54	4D 08	MON NOSE GEAR UNLOCKED LT OFF
897.80	898.34	0.54	4D 12	MON LEFT/RT GEAR UNLOCKED LT OFF
897.80	899.80	2.00	1P10FB06	CALL-OUT (GEAR UP, OFF)
882.00			10YL01	MISSED APPROACH CALL AND REQUEST FOR HOLDING
882.00	883.80	1.80	1X100002	LINE SELECT [REQUEST FOR CLEARANCE]
883.80	885.60	1.80	1X100018	LINE SELECT [MAKING MISSED APPROACH]
885.60	886.80	1.20	1X100031	PRESS KEY [1]
886.80	888.00	1.20	1X100044	PRESS [ENT]
888.00	889.20	1.20	1X100035	PRESS KEY [5]
889.20	890.40	1.20	1X100044	PRESS [ENT]
890.40	892.20	1.80	1X100023	LINE SELECT [ENTER HOLDING FOR XX MIN]
897.00	898.80	1.80	1D10XX01	MON INFORMATION MANAGEMENT ATENSON
898.80	900.80	2.00	1D10XX02	MON INFORMATION MANAGEMENT DISPLAY [MODE-S UPLINK PNDG] AMBER
926.60	928.40	1.80	1X100001	LINE SELECT [ATC UPLINKS PENDING]
928.40	938.40	10.00	1D10XL01	READ-CLRD TO MACEY INT,TURN LT HDG 060, INTCPT AND PROCEED VIA ANW R-322,CLIMB
938.40	948.40	10.00	1D10XL02	AND MAINTAIN FL180, HOLD NE OF MACEY AS PUBLSHD, EFC XXXX Z.
948.40	950.20	1.80	1X100041	LINE SELECT [WILCO]
883.00			140003	ALTITUDE CHANGE PROC
893.00			140003	ALTITUDE CHANGE PROC

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SINCE MISSION START          ACTIVITY
BEGINNING       END          TIME          EVENT/PROCEDURE
                                              TASK
899.00                                     16FB07   P/CP GOAROUND
                                                    COMMUNICATIONS
899.00        903.50          4.50            1P    19   MONITOR CALL OUT
899.00                                     16FB08   CP FLAP SET AND
                                                    CALLOUTS
899.00        901.69          2.69            4E    09   SET FLAP CONT LEVER
                                                         TO FLAPS 5
901.69        903.92          2.23            4E    15   MONITOR FLAP
                                                         POSITION INDICATOR
903.92        904.72          0.80            1P16FB11   CALL-OUT (FLAPS 5)
904.08        906.81          2.73            4B    07   MAKE MINOR THRUST
                                                         ADJUSTMENT
906.81        908.83          2.02            7F    25   MON ENG NO 1 EPR IND
906.81        908.83          2.02            7F    30   MON ENG NO 2 EPR IND
908.89        915.89          7.00            3H    08   MON ALTIMETER
915.89        916.69          0.80            1P16FB12   CALL-OUT (3000)
909.89        910.59          0.70            1P    07   MONITOR REPORT
911.00        913.69          2.69            4E    07   SET FLAP CONT LEVER
                                                         TO FLAPS 1
914.00        916.23          2.23            4E    15   MONITOR FLAP
                                                         POSITION INDICATOR
916.50        917.20          0.70            1P160033   CALL OUT -[FLAPS 1]
917.50        919.52          2.02            7F    25   MON ENG NO 1 EPR IND
917.50        919.52          2.02            7F    30   MON ENG NO 2 EPR IND
920.00        920.70          0.70            1P    07   MONITOR REPORT
921.00        922.98          1.98            4E    06   SET FLAP CONT LEVER
                                                         TO FLAPS  0
923.00        925.23          2.23            4E    15   MONITOR FLAP
                                                         POSITION INDICATOR
925.50        926.20          0.70            1P16FB29   CALL OUT [FLAPS UP]
903.00                                     140003   ALTITUDE CHANGE PROC
913.00                                     140003   ALTITUDE CHANGE PROC
923.00                                     140003   ALTITUDE CHANGE PROC
940.00                                     140003   ALTITUDE CHANGE PROC
950.00                                     180073   FLIGHT INSTRUMENT
                                                    SCAN -A1, COPILOT
960.00        970.00         10.00            2K    14   MON  MAP VIDEO
960.00        970.00         10.00            2K    46   MON STRAIGHT TREND
                                                         VECTOR SYMBOL
960.00        970.00         10.00            2K    33   MON CURVED TREND
                                                         VECTOR SYMBOLS
960.00        970.00         10.00            2J    05   MON FLT PATH ANGLE
                                                         INDIC
960.00        970.00         10.00            2J    04   MON FLT PATH ACCEL
                                                         INDIC
960.00        970.00         10.00            2J    01   MON ROLL ATT INDIC
960.00        970.00         10.00            2J    19   MON PITCH REF INDIC
960.00        970.00         10.00            3A    10   MONITOR AIRSPEED
                                                         INDIC
970.00                                     090046   FLIGHT INSTRUMENT
                                                    SCAN -A2
970.00                                     180073   FLIGHT INSTRUMENT
                                                    SCAN -A1, COPILOT
970.00        980.00         10.00            2K    14   MON  MAP VIDEO
970.00        980.00         10.00            2K    49   MON STRAIGHT TREND
                                                         VECTOR SYMBOL
970.00        980.00         10.00            2K    33   MON CURVED TREND
                                                         VECTOR SYMBOLS
970.00        980.00         10.00            2J    05   MON FLT PATH ANGLE
                                                         INDIC
970.00        980.00         10.00            2J    04   MON FLT PATH ACCEL
                                                         INDIC
970.00        980.00         10.00            2J    01   MON ROLL ATT INDIC
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SINCE MISSION START BEGINNING	END	ACTIVITY TIME	EVENT/PROCEDURE TASK		
970.00	980.00	10.00	2J	19	MON PITCH REF INDIC
970.00	980.00	10.00	3A	10	MONITOR AIRSPEED INDIC
980.00			100073	FLIGHT INSTRUMENT SCAN -A1, COPILOT	
980.00	990.00	10.00	2K	14	MON MAP VIDEO
980.00	990.00	10.00	2K	46	MON STRAIGHT TREND VECTOR SYMBOL
980.00	990.00	10.00	2K	33	MON CURVED TREND VECTOR SYMBOLS
980.00	990.00	10.00	2J	05	MON FLT PATH ANGLE INDIC
980.00	990.00	10.00	2J	04	MON FLT PATH ACCEL INDIC
980.00	990.00	10.00	2J	01	MON ROLL ATT INDIC
980.00	990.00	10.00	2J	19	MON PITCH REF INDIC
980.00	990.00	10.00	3A	10	MONITOR AIRSPEED INDIC
990.00			100073	FLIGHT INSTRUMENT SCAN -A1, COPILOT	
990.00	1000.00	10.00	2K	14	MON MAP VIDEO
990.00	1000.00	10.00	2K	46	MON STRAIGHT TREND VECTOR SYMBOL
990.00	1000.00	10.00	2K	33	MON CURVED TREND VECTOR SYMBOLS
990.00	1000.00	10.00	2J	05	MON FLT PATH ANGLE INDIC
990.00	1000.00	10.00	2J	04	MON FLT PATH ACCEL INDIC
990.00	1000.00	10.00	2J	01	MON ROLL ATT INDIC
990.00	1000.00	10.00	2J	19	MON PITCH REF INDIC
990.00	1000.00	10.00	3A	10	MONITOR AIRSPEED INDIC

B.13 TCAS ENCOUNTER—CONVENTIONAL FLIGHT DECK

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SINCE MISSION START BEGINNING	END	ACTIVITY TIME	EVENT/PROCEDURE TASK	
195.00			180001	HANDOFF TO AT[illegible]NAL APPROACH CONT[illegible]LER
195.00	207.00	12.00	1P16XX01	N 515,TURN RT HDG270 DESCND AND MAINTAIN 5000 FT.CONTACT ATL APPR ON 127.25.
200.00			140007	HEADING CHANGE PROC.
200.00	210.00	10.00	3B 01	MONITOR A/C HEADING RELATIVE TO SELECTED HDG ON CI
200.00	210.00	10.00	4A 20	ACT FLT CONTROL TO CHANGE HDG
200.00	210.00	10.00	3L 02	MON VERTICAL SPEED INDIC
200.00	204.92	4.92	3B 11	SET COURSE DIGITS AND POINTER ON CI USING COURSE CURSOR CONT
205.00	215.00	10.00	3R 58	MON A/C ATTITUDE RELATIVE TO ROLL COMMAND ON FDI
200.00			16BL02	BEGIN TURN TO DOWN-WIND LEG
210.00			16BL03	DESCEND THRU 11000.
215.00			16AA01	ADJUST THRUST AND PITCH TO MAINTAIN A 900 FPM DESCENT AT 250 KCAS USING PITCH CWS MODE OF A.P. PILOT HAS DETERMINED THAT THIS SHOULD PERMIT DECEL TO 210 FOR CROSSING BAMRR AT 6000 FT.
215.00	217.73	2.73	4B 07	MAKE MINOR THRUST ADJUSTMENT
215.00	220.00	5.00	4A 64	MANUALLY CONTROL A/C
219.00			160092	TUNE ATL APPROACH ON 127.25
220.00			160093	CONTACT ATL APPROACH ON 127.25
231.90	235.90	4.00	1P16YY90	NASA 515,ATL APPR, ROGER.
220.00			090003	FLIGHT INSTRUMENT SCAN - A

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SINCE MISSION START BEGINNING	END	ACTIVITY TIME	EVENT/PROCEDURE TASK
220.00	230.00	10.00	3R 10 MON PITCH ATTITUDE INDIC ON FDI
220.00	230.00	10.00	3L 02 MON VERTICAL SPEED INDIC
220.00	230.00	10.00	3A 10 MONITOR AIRSPEED INDIC
220.00	230.00	10.00	3S 01 MONITOR A/C HEADING RELATIVE TO SELECTED HDG ON CI
230.00			090003 FLIGHT INSTRUMENT SCAN - A
230.00	240.00	10.00	3R 10 MON PITCH ATTITUDE INDIC ON FDI
230.00	240.00	10.00	3L 02 MON VERTICAL SPEED INDIC
230.00	240.00	10.00	3A 10 MONITOR AIRSPEED INDIC
230.00	240.00	10.00	3S 01 MONITOR A/C HEADING RELATIVE TO SELECTED HDG ON CI
240.00			16TC01 TCAS ENCOUNTER
240.00	241.60	1.60	1D16XX10 MON MASTER CAUTION AURAL ALERT 2 CONCURRENT TONES 300-1600 HZ.
240.00	241.00	1.00	1D16XX03 MON MASTER CAUTION VISUAL ALERT-AMBER
241.60	243.00	1.40	1TC00001 MON VISUAL ALERT DISPLAY - AMBER [TCAS ALERT]
244.00	255.00	11.00	1TC00003 PILOT VISUAL SEARCH FOR TRAFFIC
244.00	255.00	11.00	1TC00015 MONITOR TRAFFIC DISPLAY
244.00	247.00	3.00	1TC00017 MON CALL OUT-[TRAFFIC AT 1-OCLOCK, 1200 FEET BELOW, AND CLIMBING]
252.00	255.00	3.00	1TC00023 MON CALL OUT-[TRAFFIC AT 1 O-CLOCK, 900 FEET BELOW, AND CLIMBING]
255.00	255.75	0.75	1D16XX04 MON MASTER WARNING AURAL ALERT 2 ALTERNATING TONES 400 TO 1000 HZ.
255.00	256.00	1.00	1D16XX05 MON MASTER WARNING VISUAL ALERT - RED
255.80	257.50	1.70	1TC00006 RESOLUTION ADVISORY VOICE ALERT, [TCAS CLIMB,CLIMB,CLIMB]
255.80	263.40	7.60	1TC00021 PILOT EVALUATES SITUATION AND DECIDES TO RESPOND TO R. A.
255.00	275.00	20.00	1TC00007 MON TIME CRITICAL VISUAL ALERT DISPLAY [IVSI RED EYEBROWS] CLIMB INDICATION
259.00	263.00	4.00	1TC00015 MONITOR TRAFFIC DISPLAY
259.00	262.00	3.00	1TC00025 MON CALL OUT-[TRAFFIC AT 1 O-CLOCK, 700 FEET BELOW, AND CLIMBING]
262.40	263.40	1.00	3R 04 PRESS AUTOPILOT DISENGAGE SWITCH ON CONTROL WHEEL
263.00	268.00	5.00	6A 10 PILOT EXTERNAL VISION SCAN
263.00	268.00	5.00	6A 10 PILOT EXTERNAL VISION SCAN
263.40	283.40	20.00	4A 29 ACT FLT CONTROL TO CHANGE ALT

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SINCE MISSION START		ACTIVITY TIME	EVENT/PROCEDURE TASK		
BEGINNING	END				
263.40	266.22	2.82	4B	03	ACTUATE BOTH THROTTLES
265.00	269.00	4.00	1TC00020		CALL OUT-[OK, WE ARE CLIMBING.KEEP AN EYE ON THAT GUY AND CALL APPROACH.]
265.90	266.34	0.44	7F	25	MON ENG NO 1 EPR IND
265.90	266.34	0.44	7F	30	MON ENG NO 2 EPR IND
268.90	273.90	5.00	8A	10	PILOT EXTERNAL VISION SCAN
268.90	273.90	5.00	8A	10	PILOT EXTERNAL VISION SCAN
270.00	273.00	3.00	1TC00020		MON CALL OUT-[OK, HE IS STILL AT 700 FEET BELOW US]
275.00	277.40	2.40	1TC00018		MON CALL OUT [CLEAR OF CONFLICT ING TRAFFIC]
275.00	280.00	5.00	8A	10	PILOT EXTERNAL VISION SCAN
276.00	296.00	20.00	8A	10	PILOT EXTERNAL VISION SCAN
276.00	296.00	20.00	8A	10	PILOT EXTERNAL VISION SCAN
277.00	279.82	2.82	4B	03	ACTUATE BOTH THROTTLES
277.00	279.05	2.05	3R	10	MON PITCH ATTITUDE INDIC ON FDI
279.00	279.44	0.44	7F	25	MON ENG NO 1 EPR IND
279.00	279.44	0.44	7F	30	MON ENG NO 2 EPR IND
280.00	282.03	2.03	3L	01	MON VERTICAL SPEED INDIC
283.40	298.40	15.00	4A	20	ACT FLT CONTROL TO CHANGE ALT
288.00	295.00	7.00	1TC00020		[ROGER 515,RADAR SHOWS NEGATIVE TRAF FIC.CONTINUE DESCENT AS CLEARED.
298.00			16TC02		RE-ENGAGE AUTOPILOT PITCH AND ROLL CHANNELS IN MAN CWS
298.00	300.00	2.00	3R	05	ACTUATE AUTOPILOT PITCH AND ROLL CHANNEL SWITCHES
295.00			00EV09		C/P EXT VIS SCAN
310.00			000019		FLIGHT INSTRUMENT SCAN - D
310.00	370.00	60.00	3R	06	MON PITCH ATTITUDE INDIC ON FDI
310.00	370.00	60.00	3L	02	MON VERTICAL SPEED INDIC
310.00	370.00	60.00	3A	10	MONITOR AIRSPEED INDIC
310.00	370.00	60.00	3S	15	MONITOR A/C HEADING RELATIVE TO SELECTED

B.14 TCAS ENCOUNTER—CONVENTIONAL FLIGHT DECK

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SINCE MISSION START          ACTIVITY                          EVENT/PROCEDURE
BEGINNING      END           TIME                                 TASK
195.00                                                         160001   HANDOFF TO AT' "INAL
                                                                        APPROACH CONT.   .ER

195.00       207.00            12.00                              1P16XX01   N 515,TURN RT HDG270
                                                                             DESCND AND MAINTAIN
                                                                             6000 FT,CONTACT ATL
                                                                             APPR ON 127.25.

207.00       214.00             7.00                              1A     25   ACTUATE COMM 2 PUSH-
                                                                             TO-TALK SW

207.00       214.00             7.00                              1P16YY01   515,ROGER,HDG 270.
                                                                             MAINTAIN 6000,APPR
                                                                             ON 127.25.

208.00                                                         140007   HEADING CHANGE PROC.

208.00                                                         16BL02   BEGIN TURN TO DOWN-
                                                                        WIND LEG

210.00                                                         16BL03   DESCEND THRU 11000.

218.00                                                         16AA01   ADJUST THRUST AND
                                                                        PITCH TO MAINTAIN A
                                                                        900 FPM DESCENT AT
                                                                        250 KCAS USING PITCH
                                                                        CWS MODE OF A.P.
                                                                        PILOT HAS DETERMINED
                                                                        THAT THIS SHOULD
                                                                        PERMIT DECEL TO 210
                                                                        FOR CROSSING SANRR
                                                                        AT 5000 FT.

219.00                                                         160002   TUNE ATL APPROACH
                                                                        ON 127.25

219.00       223.00             4.00                              1B     01   MON VHF-2L FREQ IND

219.00       221.00             2.00                              1B     02   SET VHF-2L FREQ-
                                                                             WHOLE NO.S

221.00       223.00             1.00                              1B     03   SET VHF-2L FREQ -
                                                                             FRACTIONS

226.00                                                         160003   CONTACT ATL APPROACH
                                                                        ON 127.25

226.00       227.40             1.40                              1B     05   SET VHF-2 COMM TFR
                                                                             SW TO LEFT

227.40       231.00             3.60                              1A     10   ACT PUSH-TO-TALK SW

227.40       231.00             3.60                              1P16XX03   ATL APPR,NASA 515
                                                                             DESCENDING TO 6000.

231.00       235.00             4.00                              1P16YY03   NASA 515,ATL APPR,
                                                                             ROGER.
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SINCE MISSION START BEGINNING	END	ACTIVITY TIME	EVENT/PROCEDURE TASK	
220.00			090003	FLIGHT INSTRUMENT SCAN - A
230.00			090003	FLIGHT INSTRUMENT SCAN - A
240.00			18TC01	TCAS ENCOUNTER
240.00	241.80	1.80	1D18XX10	MON MASTER CAUTION AURAL ALERT 2 CONCURRENT TONES 800-1500 HZ.
240.00	241.00	1.00	1D18XX03	MON MASTER CAUTION VISUAL ALERT-AMBER
240.00	295.00	55.00	8A 12	PILOT EXTERNAL VISION SCAN
241.60	243.00	1.40	1TC00018	PRESS MASTER CAUTION SWITCH
241.60	243.00	1.40	1TC00001	MON VISUAL ALERT DISPLAY - AMBER [TCAS ALERT]
244.00	247.00	3.00	1TC00002	CALL OUT-[TRAFFIC AT 1 O-CLOCK, 1200 FT BELOW,AND CLIMBING]
244.00	255.00	11.00	1TC00004	MONITOR TCAS TRAFFIC DISPLAY
252.00	255.00	3.00	1TC00022	CALL OUT-[TRAFFIC AT 1 O-CLOCK, 900 FEET BELOW, AND CLIMBING]
255.00	255.75	0.75	1D18XX04	MON MASTER WARNING AURAL ALERT 2 ALTERNATING TONES 400 TO 1000 HZ.
255.00	256.00	1.00	1D18XX05	MON MASTER WARNING VISUAL ALERT - RED
255.80	257.50	1.70	1TC00006	RESOLUTION ADVISORY VOICE ALERT, [TCAS CLIMB,CLIMB,CLIMB]
255.00	275.00	20.00	1TC00007	MON TIME CRITICAL VISUAL ALERT DISPLAY [IVSI RED EYEBROWS] CLIMB INDICATION
257.50	258.90	1.40	1TC00019	PRESS MASTER WARNING SWITCH
259.00	262.00	3.00	1TC00024	CALL OUT-[TRAFFIC AT 1 O-CLOCK, 700 FEET BELOW, AND CLIMBING]
259.00	275.00	16.00	1TC00004	MONITOR TCAS TRAFFIC DISPLAY
265.00	269.00	4.00	1TC00027	MON CALL OUT-[OK, WE ARE CLIMBING.KEEP AN EYE ON THAT GUY AND CALL APPROACH.]
270.00	273.00	3.00	1TC00028	CALL OUT-[OK, HE IS STILL AT 700 FEET BELOW US]
275.00	285.00	10.00	1TC00009	CALL ATC, [ATL APPR, NASA 515 LEVEL AT 10,000 DUE TO TCAS RA, PLEASE ADVISE]
275.00	277.40	2.40	1TC00011	CALL OUT - [CLEAR OF CONFLICTING TRAFFIC]
277.00	277.77	0.77	3H 02	MON CORR BARO ALT INDIC
288.00	295.00	7.00	1TC00020	[ROGER 515,RADAR SHOWS NEGATIVE TRAFFIC.CONTINUE DESCENT AS CLEARED.
295.00			18TC02	RE-ENGAGE AUTOPILOT PITCH AND ROLL CHANNELS IN MAN CWS
295.00			08EV08	C/P EXT VIS SCAN
295.00	340.00	45.00	8A 12	PILOT EXTERNAL VISION SCAN

B.15 TCAS ENCOUNTER—ADVANCED FLIGHT DECK

Flying Pilot

SINCE MISSION START BEGINNING	END	ACTIVITY TIME	EVENT/PROCEDURE TASK
195.00			180091 HANDOFF TO AT[illegible]INAL APPROACH CON[illegible]LER
195.00	207.00	12.00	1P16XX01 N 515,TURN RT HDG270 DESCND AND MAINTAIN 6000 FT,CONTACT ATL APPR ON 127.25.
200.00			180081 ENTER/ARM NEW ALT IN MCP
200.00	202.47	2.47	2H 33 ROTATE ALT ENG KNOB
200.00	200.78	0.78	2H 31 MON ALT ENG MODE LT BLUE - ALT ENG MODE PRESELECTED
201.40	202.46	1.06	2H 34 READ ALT ENG VALUE ON DIGITAL INDIC
202.50	203.92	1.42	2H 28 PRESS ALT ENG MODE S SW
203.90	204.68	0.78	2H 30 MON ALT ENG MODE LT ORANGE - ALT ENG MODE ARMED
209.00			18BL02 BEGIN TURN TO DOWN-WIND LEG
205.00			180082 ENTER NEW HEADNG IN MCP
205.00	207.50	2.50	2H 19 ROTATE TKA SEL KNOB
205.00	206.11	1.11	2H 20 READ TKA SEL VALUE ON DIGITAL INDIC
207.50	208.27	0.77	2H 18 MON TKA SEL MODE LT GREEN - TKA SEL MODE ENGAGED
210.00			18BL03 DESCEND THRU 11000.
210.00			090051 FLIGHT INSTRUMENT SCAN -A1
210.00	220.00	10.00	2J 02 MON PITCH ATTITUDE INDIC
210.00	220.00	10.00	2L 02 MON VERTICAL SPEED INDIC
210.00	220.00	10.00	2A 10 MONITOR AIRSPEED INDIC
210.00	220.00	10.00	2K 14 MON MAP VIDEO
210.00	220.00	10.00	2K 46 MON STRAIGHT TREND VECTOR SYMBOL
210.00	220.00	10.00	2K 33 MON CURVED TREND VECTOR SYMBOLS
219.00			180092 TUNE ATL APPROACH ON 127.25
220.00			180093 CONTACT ATL APPROACH ON 127.25
221.90	225.90	4.00	1P16YY90 NASA 515,ATL APPR, ROGER.
220.00			090051 FLIGHT INSTRUMENT SCAN -A1
220.00	230.00	10.00	2J 02 MON PITCH ATTITUDE INDIC
220.00	230.00	10.00	2L 02 MON VERTICAL SPEED INDIC
220.00	230.00	10.00	2A 10 MONITOR AIRSPEED INDIC
220.00	230.00	10.00	2K 14 MON MAP VIDEO
220.00	230.00	10.00	2K 46 MON STRAIGHT TREND VECTOR SYMBOL
220.00	230.00	10.00	2K 33 MON CURVED TREND VECTOR SYMBOLS
230.00			090051 FLIGHT INSTRUMENT SCAN -A1
230.00	240.00	10.00	2J 02 MON PITCH ATTITUDE INDIC
230.00	240.00	10.00	2L 02 MON VERTICAL SPEED INDIC
230.00	240.00	10.00	2A 10 MONITOR AIRSPEED INDIC
230.00	240.00	10.00	2K 14 MON MAP VIDEO
230.00	240.00	10.00	2K 46 MON STRAIGHT TREND VECTOR SYMBOL
230.00	240.00	10.00	2K 33 MON CURVED TREND VECTOR SYMBOLS

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SINCE MISSION START		ACTIVITY	EVENT/PROCEDURE	
BEGINNING	END	TIME	TASK	
240.00			1STC01	TCAS ENCOUNTER
240.00	241.60	1.60	1D16XX10	MON MASTER CAUTION AURAL ALERT 2 CONCURRENT TONES 300-1500 HZ.
240.00	241.00	1.00	1D16XX03	MON MASTER CAUTION VISUAL ALERT-AMBER
241.60	243.00	1.40	1TC00001	MON VISUAL ALERT DISPLAY - AMBER [TCAS ALERT]
244.00	255.00	11.00	1TC00003	PILOT VISUAL SEARCH FOR TRAFFIC
244.00	255.00	11.00	1TC00015	MONITOR TRAFFIC DISPLAY
244.00	247.00	3.00	1TC00017	MON CALL OUT-[TRAFFIC AT 1-OCLOCK, 1200 FEET BELOW, AND CLIMBING]
252.00	255.00	3.00	1TC00023	MON CALL OUT-[TRAFFIC AT 1 O-CLOCK, 900 FEET BELOW, AND CLIMBING]
255.00	255.75	0.75	1D16XX04	MON MASTER WARNING AURAL ALERT 2 ALTERNATING TONES 400 TO 1000 HZ.
255.00	256.00	1.00	1D16XX05	MON MASTER WARNING VISUAL ALERT - RED
255.80	257.50	1.70	1TC00006	RESOLUTION ADVISORY VOICE ALERT, [TCAS CLIMB,CLIMB,CLIMB]
255.80	263.40	7.60	1TC00021	PILOT EVALUATES SITUATION AND DECIDES TO RESPOND TO R. A.
255.00	275.00	20.00	1TC00007	MON TIME CRITICAL VISUAL ALERT DISPLAY [IVSI RED EYEBROWS] CLIMB INDICATION
259.00	263.00	4.00	1TC00015	MONITOR TRAFFIC DISPLAY
259.00	262.00	3.00	1TC00025	MON CALL OUT-[TRAFFIC AT 1 O-CLOCK, 700 FEET BELOW, AND CLIMBING]
262.40	263.40	1.00	3R 04	PRESS AUTOPILOT DISENGAGE SWITCH ON CONTROL WHEEL
263.00	268.00	5.00	8A 10	PILOT EXTERNAL VISION SCAN
263.00	268.00	5.00	8A 10	PILOT EXTERNAL VISION SCAN
263.40	283.40	20.00	4A 29	ACT FLT CONTROL TO CHANGE ALT
263.40	266.32	2.92	4B 03	ACTUATE BOTH THROTTLES
265.00	269.00	4.00	1TC00028	CALL OUT-[OK, WE ARE CLIMBING,KEEP AN EYE ON THAT GUY AND CALL APPROACH.]
265.90	266.34	0.44	7F 25	MON ENG NO 1 EPR IND
265.90	266.34	0.44	7F 30	MON ENG NO 2 EPR IND
268.90	273.90	5.00	8A 10	PILOT EXTERNAL VISION SCAN
268.90	273.90	5.00	8A 10	PILOT EXTERNAL VISION SCAN
270.00	273.00	3.00	1TC00029	MON CALL OUT-[OK, HE IS STILL AT 700 FEET BELOW US]
275.00	277.40	2.40	1TC00016	MON CALL OUT [CLEAR OF CONFLICTING TRAFFIC]
275.00	280.00	5.00	8A 10	PILOT EXTERNAL VISION SCAN
279.00	299.00	20.00	8A 10	PILOT EXTERNAL VISION SCAN

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SINCE MISSION START BEGINNING	END	ACTIVITY TIME	EVENT/PROCEDURE TASK		
279.00	299.00	20.00	8A	10	PILOT EXTERNAL VISION SCAN
277.00	279.82	2.82	4B	03	ACTUATE BOTH THROTTLES
277.00	279.05	2.05	3R	10	MON PITCH ATTITUDE INDIC ON FDI
279.00	279.44	0.44	7F	25	MON ENG NO 1 EPR IND
279.00	279.44	0.44	7F	30	MON ENG NO 2 EPR IND
280.00	282.03	2.03	3L	01	MON VERTICAL SPEED INDIC
283.40	298.40	15.00	4A	29	ACT FLT CONTROL TO CHANGE ALT
288.00	295.00	7.00	1TC00020		(ROGER 515,RADAR SHOWS NEGATIVE TRAF FIC.CONTINUE DESCENT AS CLEARED.
298.00			18TC02		RE-ENGAGE AUTOPILOT IN PREVIOUSLY SELEC-TED AUTO-FLIGHT MODES (FPA,TKA,CAS)
298.00	299.42	1.42	2H	07	PRESS AUTO MODE SW
299.40	300.17	0.77	2H	15	MON TKA SEL MODE LT GREEN - TKA SEL MODE ENGAGED
299.40	300.17	0.77	2H	22	MONITOR FPA SEL MODE LT GREEN - FPA SEL MODE ENGAGED
300.20	302.65	2.45	2H	20	ROTATE FPA SEL KNOB
300.20	300.97	0.77	2H	24	MONITOR FPA SEL MODE LT BLUE - FPA SEL MODE PRESELECTED
301.80	302.88	1.08	2H	27	READ FPA SEL VALUE ON DIGITAL INDIC
302.70	304.70	2.00	2K	32	MON ALT/RNG SYMBOLS
304.70	306.10	1.40	2H	21	PRESS FPA SEL MODE SW
306.10	306.87	0.77	2H	22	MONITOR FPA SEL MODE LT GREEN - FPA SEL MODE ENGAGED
310.00			000048		FLIGHT INSTRUMENT SCAN -A2
310.00	340.00	30.00	2J	02	MON PITCH ATTITUDE INDIC
310.00	340.00	30.00	3L	02	MON VERTICAL SPEED INDIC
310.00	340.00	30.00	3A	10	MONITOR AIRSPEED INDIC
310.00	340.00	30.00	2K	14	MON MAP VIDEO
310.00	340.00	30.00	2K	40	MON STRAIGHT TREND VECTOR SYMBOL
310.00	340.00	30.00	2K	33	MON CURVED TREND

B.16 TCAS ENCOUNTER—ADVANCED FLIGHT DECK

Nonflying Pilot

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SINCE MISSION START BEGINNING	END	ACTIVITY TIME	EVENT/PROCEDURE TASK
193.00			160001 HANDOFF TO AT[illegible]INAL APPROACH CON[illegible]LER
195.00	207.00	12.00	1P16XX01 N 515,TURN RT HDG270 DESCND AND MAINTAIN 6000 FT,CONTACT ATL APPR ON 127.25.
207.00	214.00	7.00	1A 25 ACTUATE COMM 2 PUSH-TO-TALK SW
207.00	214.00	7.00	1P16YY01 515,ROGER,HDG 270, MAINTAIN 6000,APPR ON 127.25.
200.00			160051 ENTER/ARM NEW ALT IN MCP
200.00			16BL02 BEGIN TURN TO DOWN-WIND LEG
205.00			160052 ENTER NEW HEADING IN MCP
210.00			16BL03 DESCEND THRU 11000.
210.00			090051 FLIGHT INSTRUMENT SCAN -A1
219.00			160092 TUNE ATL APPROACH ON 127.25
219.00	223.80	4.80	1B 01 MON VHF-2L FREQ IND
219.00	221.90	2.90	1B 02 SET VHF-2L FREQ-WHOLE NO.S
221.90	223.80	1.90	1B 03 SET VHF-2L FREQ - FRACTIONS
226.00			160093 CONTACT ATL APPROACH ON 127.25
226.00	227.40	1.40	1B 05 SET VHF-2 COMM TFR SW TO LEFT
228.40	231.90	3.50	1A 10 ACT PUSH-TO-TALK SW
228.40	231.90	3.50	1P16XX03 ATL APPR,NASA 515 DESCENDING TO 6000.
231.90	235.90	4.00	1P16YY90 NASA 515,ATL APPR, ROGER.
220.00			090051 FLIGHT INSTRUMENT SCAN -A1
230.00			090051 FLIGHT INSTRUMENT SCAN -A1
240.00			16TC01 TCAS ENCOUNTER
240.00	241.60	1.60	1D16XX10 MON MASTER CAUTION AURAL ALERT 2 CONCURRENT TONES 300-1500 HZ.
240.00	241.00	1.00	1D16XX03 MON MASTER CAUTION VISUAL ALERT-AMBER
240.00	295.00	55.00	5A 12 PILOT EXTERNAL VISION SCAN
241.60	243.00	1.40	1TC00010 PRESS MASTER CAUTION SWITCH
241.60	243.00	1.40	1TC00001 MON VISUAL ALERT DISPLAY - AMBER (TCAS ALERT)
244.00	247.00	3.00	1TC00002 CALL OUT-[TRAFFIC AT 1 O-CLOCK, 1200 FT BELOW,AND CLIMBING]
244.00	255.00	11.00	1TC00004 MONITOR TCAS TRAFFIC DISPLAY
252.00	255.00	3.00	1TC00022 CALL OUT-[TRAFFIC AT 1 O-CLOCK, 800 FEET BELOW, AND CLIMBING]
255.00	255.75	0.75	1D16XX04 MON MASTER WARNING AURAL ALERT 2 ALTERNATING TONES 400 TO 1000 HZ.
255.00	256.00	1.00	1D16XX05 MON MASTER WARNING VISUAL ALERT - RED
255.80	257.50	1.70	1TC00006 RESOLUTION ADVISORY VOICE ALERT. [TCAS CLIMB,CLIMB,CLIMB]
255.00	275.00	20.00	1TC00007 MON TIME CRITICAL VISUAL ALERT DISPLAY [IVSI RED EYEBROWS] CLIMB INDICATION

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SINCE MISSION START		ACTIVITY TIME	EVENT/PROCEDURE TASK
BEGINNING	END		
257.50	258.90	1.40	1TC00019 PRESS MASTER WARNING SWITCH
259.00	262.00	3.00	1TC00024 CALL OUT-[TRAFFIC AT 1 O-CLOCK, 700 FEET BELOW, AND CLIMBING]
259.00	275.00	16.00	1TC00004 MONITOR TCAS TRAFFIC DISPLAY
265.00	269.00	4.00	1TC00027 MON CALL OUT-[OK, WE ARE CLIMBING.KEEP AN EYE ON THAT GUY AND CALL APPROACH.]
270.00	273.00	3.00	1TC00028 CALL OUT-[OK, HE IS STILL AT 700 FEET BELOW US]
278.00	288.00	10.00	1TC00009 CALL ATC, [ATL APPR, NASA 515 LEVEL AT 10,000 DUE TO TCAS RA, PLEASE ADVISE]
275.00	277.40	2.40	1TC00011 CALL OUT - [CLEAR OF CONFLICTING TRAFFIC]
277.00	277.77	0.77	3H 02 MON CORR BARO ALT INDIC
288.00	295.00	7.00	1TC00020 [ROGER 515,RADAR SHOWS NEGATIVE TRAFFIC.CONTINUE DESCENT AS CLEARED.
298.00			19TC02 RE-ENGAGE AUTOPILOT IN PREVIOUSLY SELECTED AUTO-FLIGHT MODES (FPA,TKA,CAS)
310.00			000048 FLIGHT INSTRUMENT SCAN -A2
340.00			000048 FLIGHT INSTRUMENT SCAN -A2
295.00			00EV09 C/P EXT VIS SCAN
295.00	340.00	45.00	8A 12 PILOT EXTERNAL

APPENDIX C

TIMELINE ANALYSIS DETAILED RESULTS

APPENDIX C

Results are presented for all the scenarios in terms of histograms defining the time history of relevant activity channels, as well as summary tables to aid in comparative analysis.

The summary tables are shown in Tables C-1 through C-16, and describe the average tasking for all activity channels for each crew member and scenario. The tasking is in terms of percent channel utilization and is averaged over the entire scenario. The averages for VHF voice and data link scenarios are shown, and then the relative impacts due to data link are indicated. Note that a percent increase is additive in these comparisons. These summary tables are placed at the end of this appendix.

The histograms are illustrated in Figures C-1 through C-92, and are also placed at the end of this appendix. The horizontal time axis in these figures correlates with the time reference in Appendix B for the detailed mission scenarios, so that significant tasking impacts can be correlated with the corresponding scenario events.

C.1 NORMAL ILS APPROACH

C.1.1 Conventional Flight Deck Crew Tasking

This section presents TLA results for both crew members in a conventional flight deck operating in both a current NAS and a data link environment.

Significant results are that the nonflying pilot (copilot in the right seat) crew tasking is more substantially affected by data link implementation than is the flying pilot (pilot in the left seat).

Data link increases in internal vision are 9% greater for copilot than pilot. Data link decreases in auditory tasking are 5% greater for copilot than pilot. Other channel variations combine to produce negligible changes in the overall weighted average tasking for both pilot and copilot.

C.1.1.1 Flying Pilot

The pilot tasking channels impacted significantly by data link implementation, when channel activity is averaged over the entire scenario, are internal vision and auditory channels. As seen in Table C-1, the 1.55% increase in internal vision is largely balanced by the 1.90% decrease in auditory tasking. As a result, the weighted channel average tasking is not significantly affected. To gain insight into why increases and decreases have occurred, channel tasking is analyzed as a function of scenario elapsed time, allowing correlation with specific procedures and tasks. The cognitive channel is also investigated to see if any effects are masked by the averaging process in Table C-1.

C.1.1.1.1 Internal Vision Channel

Figure C-1 indicates internal vision channel task loading for both current NAS and data link environments. As shown, the use of data link results in tasking increases during the following key scenario events.

1. ATC vector to downwind heading
2. ATC altitude stepdown clearance
3. Monitor ATIS

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4. ATC vector to base heading

5. ATC ILS approach clearance

6. Handoff to ATL tower and landing clearance

7. Handoff to ATL ground control

8. Taxi clearance

The time for these events can be used to identify specific procedures causing the channel increases. The detailed mission scenario, Appendix B, indicates that task 1D16XX02 is the cause of each channel increase. This task is labeled "Monitor Communication Management Display [Mode-S Uplink Pending] Amber."

C.1.1.1.2 Cognitive Channel

Figure C-2 compares cognitive channel tasking for current NAS and data link concepts. Key scenario events and their effects are as follows.

9. Handoff from ATL center—slight decrease

10. Handoff to ATL final approach—slight decrease

11. Monitor ATIS—decrease

12. Landing clearance—slight increase

13. Taxi clearance—slight increase

It can be seen by reference to the detailed mission scenario that the slight tasking decreases are due to the pilot not having to monitor ATC audio with the data link concept. Similarly, the slight tasking increases are due to pilot monitoring of the communication management display annunciating "UPLINK PENDING" as in the previous internal vision channel tasking discussion. The somewhat greater tasking decrease is due to the pilot not having to listen to the ATIS audio with the data link concept.

C.1.1.1.3 Auditory Channel

Pilot auditory channel tasking is impacted the most by data link implementation, as shown by Figure C-3. As could be expected, the largest tasking decrease is due to the ATIS monitoring scenario event. The data link concept eliminates approximately 30 sec of audio monitoring. This tasking decrease is predicated on an assumption that the copilot deemed it unnecessary to relay any information to the pilot, an assumption that would certainly not always be correct.

The handoff from ATL center correlates with a tasking decrease due to the nature of a data link handoff requiring only the copilot to select the new VHF comm frequency for monitoring. The other tasking effects are largely due to shifting the pilot auditory monitoring from listening to ATC on the VHF radio to listening to the copilot read out loud the uplink as he reads it on the CDU.

C.1.1.1.4 Weighted Channel Average

Figure C-4 illustrates the combined effect of the individual channel tasking variations due to data link implementation. Scenario events associated with ATC handoffs correlate with slight tasking decreases, while events associated with ATC clearances correlate with slight tasking increases. The ATIS monitoring event correlates with a more significant tasking decrease.

C.1.1.2 Nonflying Pilot

The nonflying pilot (copilot) tasking is more extensively impacted by data link implementation than is the flying pilot tasking. Table C-2 shows a 1.94% decrease in external vision, a 10.57% increase in internal vision, a 3.49% increase in left hand, a 4.79% decrease in right hand, a 0.06% increase in cognitive, a 7.34% decrease in auditory, a 1.08% increase in verbal, and a 0.53% increase in weighted channel average values of activity.

C.1.1.2.1 External Vision

Figure C-5 indicates external vision channel task loading for both current NAS and data link environments. The use of data link results in a tasking decrease during the ATIS monitoring event. This decrease results from the requirement to not exceed 100% total vision (internal + external) during a time when the internal vision channel is heavily loaded. Normally, a reduction in task loading is considered advantageous. In this case, however, an outside visual scan is an important monitoring task and a reduction in scan would be undesirable. It should be noted, however, that due to programming limitations the amount of external vision tasking reduction is probably unrealistically high. Another slight tasking decrease occurs during the taxi clearance scenario event. This coincides with an internal vision tasking increase due to the copilot reading the uplinked taxi clearance.

C.1.1.2.2 Internal Vision

Figure C-6 indicates internal vision channel loading for current NAS and data link environments. Significant tasking increases occur during all but the first of the key scenario events. The highest tasking increase is correlated with the ATC ILS approach clearance event. This is due to the longer and more complicated uplink message requiring more time for the copilot to read. The ATIS and landing clearance events, which require reading lengthy messages, also correlate with large tasking increases.

C.1.1.2.3 Left Hand

Figure C-7 shows the increased left hand channel loading due to data link implementation. A tasking increase is indicated for every scenario key event. The detailed mission scenario shows two copilot left hand channel interactions for each data link transaction; initially to select the pending uplink (Task 1X160001) for display, and then to send the confirming downlink (Task 1X160041). The two highest tasking increases occur during handoff events to ATL approach and to ATL ground control. These events are distinguished from the other key scenario events in that the left hand channel is utilized to select a new frequency on the VHF comm radio panel, in addition to the other data link tasks.

C.1.1.2.4 Right Hand

Figure C-8 indicates the tasking effects due to data link implementation. Right hand tasking is decreased during all the key scenario events except the ATIS event which does not involve that channel. The right hand channel is utilized in VHF voice communications to key the microphone using the control wheel push-to talk switch while transmitting. The data link concept eliminates the need for this task, producing the tasking decreases. Note that if the pilot (sitting in the left seat) were handling communications, this tasking decrease would be applied to the left hand channel.

C.1.1.2.5 Cognitive

Figure C-9 illustrates the cognitive channel loading effects due to data link implementation. The tasking is decreased for the scenario events involving ATC handoffs, since there is no requirement to call the new ATC facility using data link. Tasking is increased during ATC clearance events, reflecting the procedure where the copilot reads the uplink message out loud to the pilot.

C.1.1.2.6 Auditory

Figure C-10 shows the expected data link effect of significant auditory tasking decreases during all the key scenario events. The ATIS and ILS approach clearance events correlate with the highest tasking decreases since the ATC messages are the longest.

C.1.1.2.7 Verbal

Figure C-11 indicates an unexpected verbal tasking effect of data link implementation. The ATC vector, ILS approach clearance, landing clearance, and taxi clearance events correlate with verbal tasking increases. Examination of the detailed mission scenario reveals that the copilot is spending more time reading the uplink message out loud to the pilot than he saves by not having to read back the clearance to ATC on the VHF radio. This is particularly evident during the ILS approach clearance event. Tasking decreases are indicated during ATC handoffs, as expected.

C.1.1.2.8 Weighted Channel Average

Figure C-12 illustrates the combined effect of the individual channel tasking variations due to data link implementation. As was the case for the pilot, tasking decreases correlate with ATC handoffs and the ATIS scenario event. Tasking increases correlate with ATC clearances. Overall, the magnitude of the tasking increases and decreases is greater than that for the pilot tasking comparisons.

C.1.2 Advanced Flight Deck

This section presents TLA results for both crew members in an advanced flight deck operating in both a current NAS and a data link environment.

It may be significant to note that results for the advanced flight deck closely parallel those for the conventional flight deck.

C.1.2.1 Flying Pilot

TLA results for the flying pilot in the advanced flight deck are similar to those for the conventional flight deck. Taking into account the overall tasking reductions due to increased automation in the advanced flight deck, the channel tasking impact due to data link implementation is very similar to the trends noted for the conventional flight deck. As listed in Table C-3, when averaged over the entire scenario, the only channels significantly affected by data link are internal vision and auditory. As shown, the 1.71% increase in internal vision tasking is largely balanced by the 1.91% decrease in auditory tasking, resulting in an insignificant change in the weighted channel average tasking.

C.1.2.1.1 Internal Vision

Figure C-13 indicates comparative internal vision task loading for current NAS and data link environments. The advanced flight deck results indicate tasking increases during the same key scenario events as in the conventional flight deck analysis. The detailed mission scenario indicates that the task "Monitor Information Management Display [Mode-S Uplink Pending] Amber" is the cause of each tasking increase. Note that Figure C-1 shows a peak tasking of 100% for the conventional flight deck, while Figure C-13 indicates an 80% tasking level during that same event. This event, "Handoff to ATL tower and landing clearance," coincides with crossing the outer marker and intercepting the glideslope. The lower task loading at this point in the advanced flight deck scenario is due to the advanced guidance and display technology utilized.

C.1.2.1.2 Auditory

Pilot auditory tasking in the advanced flight deck is affected by data link implementation in the same way that auditory tasking is affected in the conventional flight deck. As shown in Figure C-14, which is very similar to Figure C-3 for the conventional flight deck, the largest tasking decrease is due to the ATIS monitoring event. The ATL center handoff correlates with another tasking decrease, as in the case of the conventional flight deck.

C.1.2.1.3 Weighted Channel Average

Figure C-15 illustrates that the net effect on pilot tasking is similar to that for the conventional flight deck. ATC handoffs correlate with slight tasking decreases, while ATC clearances correlate with slight tasking increases. The ATIS scenario event correlates with a more significant tasking decrease.

C.1.2.2 Nonflying Pilot

Nonflying pilot (copilot) tasking effects in the advanced flight deck due to data link are very similar to the effects noted for the conventional flight deck. Table C-4 indicates a 1.94% decrease in external vision, a 10.57% increase in internal vision, a 3.49% increase in left hand, a 4.79% decrease in right hand, a 0.06% increase in cognitive, a 7.35% decrease in auditory, a 1.08% increase in verbal, and a 0.53% increase in weighted channel average values of activity.

C.1.2.2.1 External Vision

External vision tasking effects due to data link implementation are similar to those for the conventional flight deck, as shown in Figure C-16. The tasking reductions are slightly less than for the conventional flight deck, due to minor differences in the current NAS tasking.

C.1.2.2.2 Internal Vision

Figure C-17 shows that internal vision tasking effects are very similar to the conventional flight deck, except for the portion correlated with the handoff to ATL ground control and the taxi clearance. The advanced flight deck required a higher level of tasking during these events in the current NAS. This was due to copilot monitoring of the EADI and TV video during touchdown and rollout, while the AGCS performed an autoland. When combined with the increased loading due to the data link handoff to ATL ground and the taxi clearance, the internal vision channel reached a peak loading of approximately 130%.

C.1.2.2.3 Left Hand

Figure C-18 shows that the tasking for this channel is identical to those for the conventional flight deck. This is expected since the data link concept for the copilot operates in a manner independent of whether it is an advanced or conventional flight deck.

C.1.2.2.4 Right Hand

Figure C-19 indicates that the tasking effects due to data link are identical to those for the conventional flight deck, as in the case of left hand channel tasking.

C.1.2.2.5 Cognitive

Figure C-20 indicates that tasking effects are similar to those for the conventional flight deck.

C.1.2.2.6 Auditory

Figure C-21 shows tasking effects identical to those for the conventional flight deck.

C.1.2.2.7 Verbal

Figure C-22 shows tasking effects identical to those for the conventional flight deck.

C.1.2.2.8 Weighted Channel Average

Figure C-23 indicates tasking effects similar to those for the conventional flight deck.

C.2 ILS APPROACH WITH WEATHER DEVIATION

C.2.1 Conventional Flight Deck

C.2.1.1 Flying Pilot

The pilot tasking channels impacted significantly by data link implementation, when channel activity is averaged over the entire scenario, are internal vision and auditory channels. As seen in Table C-5, the 1.75% increase in internal vision is balanced by the 1.94% decrease in auditory tasking. As a result, the weighted average tasking is not significantly affected. These results are similar to the normal ILS approach scenario.

C.2.1.1.1 Internal Vision Channel

The data link implementation had a slightly more adverse impact on internal vision when the overall mission complexity was increased with a weather deviation. As shown in Figure C-24, the key scenario event of requesting a new heading from ATC corresponds with a tasking increase due to data link. This is due to the communications management display monitoring task imposed by the data link system. Other internal vision tasking increases are similar to the normal ILS scenario.

C.2.1.1.2 Auditory Channel

Data link impact on auditory tasking, as shown in Figure C-25, is similar to that for the normal ILS scenario. The addition of the weather deviation tasks resulted in no net change in tasking decrease due to data link, since the elimination of pilot monitoring of ATC is replaced with pilot monitoring of the copilot.

C.2.1.1.3 Weighted Channel Average

Figure C-26 indicates that the weighted channel increases (resulting from internal vision tasking increases) are largely balanced by the weighted channel decreases (resulting from the auditive tasking decreases).

C.2.1.2 Nonflying Pilot

The data link impact on copilot tasking in the weather deviation scenario is similar but more pronounced than that in the normal ILS scenario. Table C-6 lists the average values of channel tasking for the weather deviation scenario. Comparison with Table C-2 for the normal ILS approach shows that the increased mission complexity resulted in data link implementation more adversely affecting internal vision (approximately 3% greater increase), left hand (approximately 1.5% greater increase), and the weighted channel average (0.3% greater increase). Other channels were more favorably impacted by data link implementation due to increased mission complexity. The right hand average tasking decrease was 1.4% greater, while the average auditory tasking decrease was 1.2% greater in the weather deviation scenario.

C.2.1.2.1 Internal Vision

Figure C-27 indicates internal vision task loading for both current NAS and data link implementation. As shown, the task loading is identical to that of Figure C-6 for the normal ILS scenario except for the key scenario events associated with the weather deviation. A large increase in internal vision tasking is evident at that time, due to the copilot interacting with the CDU to read uplinks and send downlinks.

C.2.1.2.2 Left Hand

Figure C-28 indicates the left hand tasking increases due to data link implementation. Comparison with Figure C-7 indicates a slight tasking increase corresponding to the weather deviation event that does not appear in the normal ILS scenario. This is due to the extra CDU key pushes required to request a new heading around the weather.

C.2.1.2.3 Right Hand

Figure C-29 indicates the right hand tasking decreases due to data link. Comparison with Figure C-8 indicates that the extra ATC communications in the weather deviation scenario requiring right hand activity to key the microphone is eliminated by data link implementation.

C.2.1.2.4 Cognitive

Figure C-30 indicates data link impact on cognitive tasking. Slight tasking increases are balanced by slight tasking decreases during the weather deviation event.

C.2.1.2.5 Auditory

Figure C-31 indicates the auditory tasking decreases due to data link. The tasking reductions shown during the weather deviation event are similar to those for other ATC clearances.

C.2.1.2.6 Verbal

Figure C-32 indicates the verbal tasking decreases due to data link. The weather deviation corresponds with a slight tasking decrease as shown.

C.2.1.2.7 Weighted Channel Average

Figure C-33 indicates the weighted channel average tasking impact due to data link. The weather deviation corresponds with an initial tasking increase due to increased visual tasking, followed by a tasking decrease due to reduced auditive tasking. A minor net change to the weighted average tasking is the result.

C.2.2 Advanced Flight Deck

C.2.2.1 Flying Pilot

Advanced flight deck pilot tasking channels impacted by data link implementation in the weather deviation scenario were similar to those impacts noted in the normal ILS scenario, with the addition of a cognitive tasking increase due to data link. When channel activity is averaged over the entire scenario, as shown in Table C-7, internal vision (3.5% increase) and cognitive (1.6% increase) tasking were increased due to data link. Auditory tasking was decreased by 1.95%. As a result, weighted channel average tasking increased by 0.8%.

C.2.2.1.1 Internal Vision Channel

Figure C-34 indicates comparative internal vision tasking for current NAS and data link environments in the ILS weather deviation scenario. As shown, the scenario events associated with the weather deviation correlate with a 40% overload of the internal vision channel in the data link implementation case. Study of the detailed mission scenario, Appendix B, indicates that the pilot tasks contributing to this overload are Task 090048—Flight Instrument Scan, Task 18DL81—Arm New DL MCP Altitude, and Task 18DL82—Engage data linked Heading in MCP. Comparison with the mission scenario for the current NAS indicates that the instrument scan task was replaced by a shorter instrument scan at an earlier time, helping to prevent the tasking overload in the current NAS scenario.

C.2.2.1.2 Cognitive Channel

Figure C-35 indicates comparative cognitive channel tasking. A tasking increase due to data link is evident during the weather deviation events. Review of the mission scenario indicates that this is due to the instrument scan coinciding with the heading and altitude select tasks on the mode control panel.

C.2.2.1.3 Right Hand Channel

Figure C-36 indicates comparative right hand tasking. A slight tasking decrease due to data link is shown during scenario events which correspond to pilot interaction with the mode control panel.

C.2.2.1.4 Auditory

Figure C-37 indicates auditory comparisons. As shown, the trend established in the normal ILS scenario is continued where the initial tasking decrease is compensated by a similar tasking increase, due to replacing pilot monitoring of ATC with pilot monitoring of the copilot.

C.2.2.1.5 Weighted Channel Average

Figure C-38 illustrates the comparative weighted channel average tasking for the weather deviation scenario. As shown, a significant tasking increase is indicated for the initial portion of the weather deviation.

C.2.2.2 Nonflying Pilot

Advanced flight deck copilot tasking channels were impacted by data link implementation in the weather deviation scenario in a manner very similar to that for the conventional flight deck, as discussed in Section 7.2.1.2. When channel activity is averaged over the entire scenario, as shown in Table C-8, the most significant tasking impacts are in internal vision (13.33% increase), left hand (5.07% increase), right hand (6.17% decrease), auditory (8.55% decrease), and a weighted average tasking increase of 1.03%.

Comparison with data from Table C-4 for the advanced flight deck copilot tasking in the normal ILS scenario indicates that the increased mission complexity of the weather deviation scenario served to amplify the impact of data link. Internal vision and left hand tasking was more adversely affected by data link in the weather deviation scenario. Conversely, right hand and auditory tasking was more favorably impacted. These trends are identical to those described in section C.2.1.2.

C.2.2.2.1 Internal Vision

Figure C-39 indicates internal vision tasking comparisons for the weather deviation scenario. As shown, tasking increases due to data link are identical to those of Figure C-17 for the normal ILS scenario, except for the key scenario events associated with the weather deviation. A large increase in internal vision tasking is evident at that time, coinciding with copilot interaction with the CDU to read uplinks and send downlinks.

C.2.2.2.2 Left Hand

Figure C-40 indicates left hand tasking comparisons. Comparison with Figure C-7 for the normal ILS scenario shows identical tasking increases due to data link except for weather deviation events. CDU key pushes due to uplink acknowledgments and downlink requests are responsible for this. This situation is similar to that for the conventional flight deck copilot tasking.

C.2.2.2.3 Right Hand

Figure C-41 compares data link and current NAS right hand tasking in the weather deviation scenario. A tasking reduction coinciding with weather deviation communications is due to the elimination of microphone keying tasks with data link.

C.2.2.2.4 Auditory

Figure C-42 indicates auditory tasking decreases coinciding with weather deviation events. The extra communications required for weather deviation produces a corresponding task reduction for data link implementation, as compared to the tasking comparisons in Figure C-21 for the normal ILS scenario.

C.2.2.2.5 Weighted Channel Average

As in the conventional flight deck case for the weather deviation scenario, an initial tasking increase due to increased visual tasking is followed by a tasking decrease due to reduced auditive tasking. A minor net increase in the weighted average tasking is the result. This is shown in Figure C-43.

C.3 ILS MISSED APPROACH WITH REROUTE

This section presents TLA results based on a higher level of mission complexity than that achieved for the normal ILS scenario. This more complex scenario incorporates a pilot initiated missed approach and a rerouting to a holding fix.

Crew tasking analysis for this scenario was done for both current NAS (VHF voice) and data link communications. In the current NAS case, the flying pilot calls ATC requesting clearance to hold for 15 min. The nonflying pilot is retracting flaps and landing gear, and making callouts to the pilot during this time. In the data link case, the copilot (nonflying pilot) utilizes the data link to request holding. He does this at the same time as airplane reconfiguration and callouts are accomplished.

C.3.1 Conventional Flight Deck

This section presents TLA results for both crew members in a conventional flight deck operating in both a current NAS and a data link environment. Significant results are that data link implementation reduces pilot auditory and verbal tasking and that copilot verbal, left hand, and internal vision tasking are increased.

C.3.1.1 Flying Pilot

The pilot tasking channels impacted significantly by data link implementation, when channel activity is averaged over the entire scenario, are internal vision (1.22% increase), auditory (3.25% decrease), and verbal (2.7% decrease). These changes, as seen in Table C-9, combine to produce a net weighted average tasking decrease of 1.46%.

C.3.1.1.1 Internal Vision

Figure C-44 indicates comparative internal vision task loading for current NAS and data link environments. As seen in the detailed mission scenario, Appendix B, the missed approach scenario is identical to the normal ILS scenario up to approximately 865 sec elapsed time. As seen in Figure C-44, the use of data link results in two internal vision pilot tasking increases associated with the missed approach. The first tasking increase is due to the visual annunciation of a pending uplink (Task 1D16XX09). This uplink is read aloud by the copilot and advises that the preceding airplane encountered extreme windshear. The second tasking increase is due to visual annunciation of another uplink pending (Task 1D16XX02), which is read aloud by the copilot and provides clearance to a holding fix.

C.3.1.1.2 Auditory

Figure C-45 indicates comparative auditory task loading for current NAS and data link environments. An initial tasking decrease is followed by a tasking increase due to data link implementation causing the copilot to read the windshear warning to the pilot. This trend is repeated when the missed approach and holding instructions are read aloud by the copilot in the data link implementation.

C.3.1.1.3 Verbal

Figure C-46 compares current NAS and data link verbal tasking. Tasking decreases are shown to correlate with data link implementation eliminating pilot communication with ATC, since the copilot assumes communication tasks in the data link scenario. Tasking decreases correlate with the request for missed approach (Task 1P16FB16) and the holding request.

C.3.1.1.4 Weighted Channel Average

Figure C-47 compares current NAS and data link weighted channel average tasking. Verbal and auditory tasking decreases are seen to outweigh internal vision increases, producing a net tasking decrease during the missed approach segment of the scenario.

C.3.1.2 Nonflying Pilot

The nonflying pilot (copilot) channels impacted significantly by data link implementation are internal vision (13.11% increase), left hand (4.52% increase), right hand (5.0% decrease), auditory (10.62% decrease), and verbal (3.22% increase). These effects, as seen in Table C-10, combine to produce a net weighted channel average tasking increase of 0.91%.

C.3.1.2.1 Internal Vision

Figure C-48 indicates internal vision tasking for data link and current NAS environments. A tasking overload condition is indicated due to data link during the initial portion of the missed approach segment of the scenario. This overload correlates with Procedure 16FB05, "Copilot Goaround Activities," and Procedure 15YL01, "Missed Approach Call and Request for Holding." Instrument scan and flap/gear monitoring overlap with downlink selection using the CDU, creating the overload. A tasking decrease is then indicated, followed by another tasking increase. This is due to a shift in copilot tasking based on reading the holding clearance on the CDU instead of writing down the clearance while listening to the VHF voice.

C.3.1.2.2 Left Hand

A significant tasking increase due to data link is evident in Figure C-49. This increase correlates with the copilot selecting and sending downlink messages advising of a missed approach and requesting holding.

C.3.1.2.3 Right Hand

Figure C-50 indicates comparative tasking effects for data link and VHF voice. A right hand tasking decrease due to data link is correlated with elimination of the task of writing down the ATC clearance on paper.

C.3.1.2.4 Auditory

Figure C-51 indicates comparative auditory tasking for data link and VHF voice. A significant auditory tasking decrease is evident where the ATC clearance to the holding fix is uplinked on data link rather than by VHF voice.

C.3.1.2.5 Verbal

A verbal tasking increase is indicated where the copilot reads the uplinked message out loud to the pilot in the data link implementation, as seen in Figure C-52. The significant tasking increase for the copilot using data link is primarily because the pilot handles the missed approach communications in the VHF voice case.

C.3.1.2.6 Weighted Channel Average

Figure C-53 shows the overall impact of the individual tasking effects. Internal vision and left hand increases initially combine to produce an increase in the weighted channel average. Internal vision, right hand, and auditory decreases then combine to produce a decrease in the average. Internal vision and verbal tasking increases then combine to again increase the weighted channel average.

C.3.2 Advanced Flight Deck

This section presents TLA results for both crew members in an advanced flight deck operating in both a current NAS and a data link environment. Significant results are that data link implementation reduces pilot left hand and right hand, auditory, and verbal channel tasking and increases pilot internal vision tasking. Data link impact on copilot tasking is primarily a tasking reduction for right hand and auditory channels, with some tasking increase for internal vision, left hand, cognition, and verbal channels.

C.3.2.1 Flying Pilot

As shown in Table C-11, significant tasking impacts based on average scenario values due to data link are in internal vision (2.62% increase), left hand (4.95% decrease), right hand (2.11% decrease), auditory (2.92% decrease), and verbal (2.53% decrease). When combined in a weighted channel average, a 1.24% net tasking decrease is indicated.

C.3.2.1.1 Internal Vision

Figure C-54 indicates comparative internal vision task loading in the advanced flight deck for current NAS and data link environments. The first two tasking increases correlate with monitoring of the information management display, Task 1D16XX09, which annunciates the uplinked windshear advisory and clearance to the holding fix. The remaining tasking increases correlate with monitoring of the FMC route update on the map display of the EHSI.

C.3.2.1.2 Left Hand

Figure C-55 indicates a significant reduction in pilot left hand tasking due to data link. Examination of the mission scenario, Appendix B, reveals that the new route to the holding fix must be manually input into the FMC by the copilot in the current NAS case, while the data link implementation allows the new route to be automatically transferred into the FMC. The decreased time needed to engage the new route in the FMC means less manual flight tasking for the pilot, producing this tasking decrease.

C.3.2.1.3 Right Hand

Figure C-56 indicates a tasking decrease for the right hand which is of a similar nature to that for the left hand tasking previously discussed. The lesser magnitude of tasking is indicative of throttle control for the right hand, as opposed to left hand for the control wheel.

C.3.2.1.4 Auditory

The alternating auditory decreases and increases shown in Figure C-57 are due to data link implementation shifting the pilot's auditive tasking from monitoring ATC on VHF voice to monitoring the copilot callouts of the uplinks.

C.3.2.1.5 Verbal

Figure C-58 indicates verbal tasking decreases provided by data link, shifting the task of calling ATC from the pilot using voice to the copilot using the data link CDU.

C.3.2.1.6 Weighted Channel Average

Figure C-59 indicates data link impact on weighted channel average tasking. Auditory and verbal tasking decreases outweigh internal vision tasking increases in the initial portion of the missed approach segment, producing a net weighted channel decrease. Left and right hand tasking decreases in the latter portion of the scenario continue the net tasking decrease.

C.3.2.2 Nonflying Pilot

As shown in Table C-12, significant tasking impacts due to data link, based on average scenario values, are in internal vision (8.9% increase), left hand (4.2% increase), right hand (10.3% decrease), cognition (2.0% increase), auditory (9.95% decrease), and verbal (3.15% increase). When combined in a weighted channel average, a net 0.29% tasking increase is indicated.

C.3.2.2.1 Internal Vision

Figure C-60 indicates comparative internal vision task loading in the advanced flight deck for current NAS and data link environments. A tasking overload condition is indicated due to data link during the initial portion of the missed approach segment of the scenario. As in the comparative task loading for the conventional flight deck, this overload correlates with Procedure 16FB05, "Copilot Goaround Activities," and Procedure 16YL01, "Missed Approach Call and Request for Holding." Instrument scan and flap/gear monitoring overlap with downlink selection using the CDU, creating the overload. A tasking decrease is then indicated, correlating with the elimination of the copilot writing down the clearance on paper. A second tasking decrease is then indicated, correlating with the automatic transfer of the new route clearance to the FMC. The data link implementation thus eliminates the copilot tasks of creating and entering a DIRECT-TO waypoint with the FMC CDU.

C.3.2.2.2 Left Hand

Figure C-61 indicates a significant tasking increase due to data link, which correlates with the copilot selecting and sending downlink messages advising of a missed approach and requesting holding. This effect is similar to that for the conventional flight deck.

C.3.2.2.3 Right Hand

Figure C-62 indicates a significant tasking decrease due to data link implementation. This tasking decrease is greater than that for the conventional flight deck which has no capability for lateral navigation without an FMC. The advanced flight deck in the VHF voice implementation incorporates a current technology type of FMC requiring manual route modifications via the CDU keypad. The data link implementation in the advanced flight deck, however, permits route modifications to be automatically transferred from the data link system to the FMC, eliminating manual crew interface with the CDU. This produces the significant right hand tasking decrease as shown.

C.3.2.2.4 Cognition

Figure C-63 indicates comparative cognitive task loading. A large tasking increase is indicated due to data link at the end of the scenario. This is due to the fact that the VHF voice implementation requires the copilot to enter data into the CDU to modify the route. In the data link implementation, this task is eliminated, opening up a time window for the copilot to resume a scan of the instrument panel. The detailed mission scenario, Appendix B, shows that Procedure 180073, "Flight Instrument Scan," is tasked for the last 40 sec of the scenario in the advanced flight deck. This scan is at a higher level of cognitive loading than the CDU data entry in the conventional flight deck, producing a somewhat arbitrary tasking increase for the data link implementation.

C.3.2.2.5 Auditory

Figure C-64 indicates comparative auditory tasking. A significant tasking decrease, similar to that for the conventional flight deck, is evident where the windshear advisory and clearance to the holding fix is uplinked on data link instead of by VHF voice.

C.3.2.2.6 Verbal

Figure C-65 shows comparative verbal tasking for data link and VHF voice. As in the conventional flight deck case, two significant verbal tasking increases occur due to data link implementation requiring the copilot to read the uplinked messages to the pilot. The first increase correlates with the windshear advisory uplink and the second increase with the clearance to the holding fix.

C.3.2.2.7 Weighted Channel Average

Figure C-66 shows the overall impact of the individual tasking effects. Internal vision, left hand, and verbal tasking increases outweigh auditory tasking decreases to produce a net tasking decrease during the initial portion of the missed approach segment of the scenario. Internal vision, right hand, and auditory tasking decreases then combine to produce a net tasking decrease. A smaller net tasking increase is then produced primarily by increased verbal tasking, followed by a net decrease and then a net increase due to right hand and cognitive effects, respectively.

C.4 ILS APPROACH WITH TCAS ENCOUNTER

This section compares crew tasking based on a scenario having an evasive collision avoidance maneuver to crew tasking based on a normal ILS approach. The TLA results previously discussed in section C.1 are utilized as the baseline for comparison to the TCAS encounter tasking results. The rationale for this comparison is that previous TCAS research has disclosed the probability of a significant false alarm rate. Were such a false alarm to occur, the actual crew tasking increase would be in relation to the nominal crew tasking resulting from a scenario without any ATC intervention or other abnormalities. It should be noted that both scenarios utilize VHF voice communications, since TCAS implementation does not require a data link for pilot/controller communication.

C.4.1 Conventional Flight Deck

This section presents TLA results for both crew members in two conventional flight deck implementations; one which includes TCAS and one which excludes TCAS. The pilot tasking results which are most significantly increased due to TCAS implementation are external vision, left hand, and auditory channels. Significant copilot tasking results increased due to TCAS are internal vision, cognition, and verbal channels.

C.4.1.1 Flying Pilot

As shown in Table C-13, tasking effects due to TCAS, which are based on average scenario values, are in external vision (2.3% increase), internal vision (0.85% increase), left hand (3.5% increase), right hand (1.5% increase), cognition (0.82% increase), and auditory (2.5% increase) tasking. When combined as a weighted channel average, a 2.03% tasking increase is indicated.

C.4.1.1.1 External Vision

Figure C-67 indicates comparative external vision tasking for a nominal ILS approach and a TCAS encounter. As seen in the figure and by reference to the detailed mission scenario in Appendix B, a large tasking increase is correlated with a pilot external vision scan. This scan begins after the TCAS caution alert which annunciates a traffic advisory, and continues through the resolution advisory until clear of traffic.

C.4.1.1.2 Internal Vision

Figure C-68 indicates comparative internal vision tasking for the nominal ILS approach and the TCAS encounter. This increase begins with the master caution visual alert annunciating the TCAS traffic advisory. Pilot monitoring of the TCAS traffic display then dominates the internal vision channel until annunciation of the resolution advisory, at which time the time critical climb warning on the IVSI is monitored.

C.4.1.1.3 Left Hand

Figure C-69 indicates the left hand tasking effects due to TCAS. The tasking increase shown correlates with Task 4A 29, "Actuate Flight Controls to Change Altitude," which occurs shortly after annunciation of the resolution advisory and continues until clear of traffic and the autopilot is re-engaged.

C.4.1.1.4 Right Hand

Figure C-70 indicates right hand tasking effects due to TCAS. Right hand tasking increases coincide with left hand increases due to Task 4A 29, although at a lower level. Task 4B 03, "Actuate Both Throttles," also contributes to this loading.

C.4.1.1.5 Cognitive

Figure C-71 indicates cognitive tasking effects due to TCAS. The tasking increase shown correlates with the TCAS resolution advisory and a pilot judgment task where the decision is made to respond to the resolution advisory. IVSI monitoring and TCAS traffic display monitoring also contribute to this tasking.

C.4.1.1.6 Auditory

Figure C-72 indicates auditory tasking increases due to TCAS. The highest tasking increase occurs near the resolution advisory when several copilot callouts are monitored as the copilot advises of the intruder's relative bearing and altitude. Other tasking increases correlate with a copilot callout when clear of traffic and when ATC advises to continue descent.

C.4.1.1.7 Weighted Channel Average

Figure C-73 indicates the combined effect of the individual channel increases. The peak tasking increase occurs about 5 sec after beginning to respond to the TCAS time critical climb warning, while actuating the flight controls, monitoring the IVSI, visually scanning outside, and monitoring the copilot callouts.

C.4.1.2 Nonflying Pilot

As shown in Table C-14, tasking effects due to TCAS averaged over the entire scenario are in internal vision (2.25% increase), right hand (0.87% increase), cognition (1.86% increase), auditory (1.46% increase), verbal (2.37% increase), and weighted channel average (2.13% increase).

C.4.1.2.1 Internal Vision

Figure C-74 indicates a significant tasking increase due to TCAS which continues throughout the TCAS encounter. Primary tasks contributing to this tasking increase are Task 1TC00004, "Monitoring TCAS Traffic Display," and Task 1TC00007, "Monitoring Time Critical IVSI Display." Monitoring caution and warning visual alerts and the visual alert display also contribute to this tasking increase.

C.4.1.2.2 Right Hand

Figure C-75 indicates right hand tasking increases due to TCAS. This increase correlates with the copilot calling ATC to advise of the TCAS evasive maneuver.

C.4.1.2.3 Cognitive

Figure C-76 indicates a cognitive tasking increase due to TCAS which continues throughout the TCAS encounter. Primary tasks contributing to this increase are TCAS traffic display and IVSI monitoring, as in the internal vision channel.

C.4.1.2.4 Auditory

Figure C-77 indicates the auditive tasking increases due to TCAS. Aural alert and pilot callout monitoring as well as ATC monitoring creates this increase.

C.4.1.2.5 Verbal

Figure C-78 indicates verbal tasking increases due to TCAS. Callouts of intruder bearing and altitude, as well as communication with ATC, create this tasking increase.

C.4.1.2.6 Weighted Channel Average

Figure C-79 indicates the combined effect of the individual channel increases. The peak tasking increase occurs approximately 5 sec after the evasive maneuver is begun, while monitoring the TCAS traffic display, making callouts, and monitoring the IVSI.

C.4.2 Advanced Flight Deck

This section presents TLA results for both crew members in two advanced flight deck implementations; one which includes TCAS and one which excludes TCAS.

Table C-1. Impact On Average Channel Activity Due To Data Link Implementation

NORMAL ILS APPROACH SCENARIO

CONVENTIONAL FLIGHT DECK

FLYING PILOT
(LEFT SEAT)

CHANNEL	PERCENT TASKING AVERAGED OVER ENTIRE SCENARIO		PERCENT INCREASE (DECREASE)
	CURRENT NAS VHF VOICE	MODE-S DATA LINK	
EXTERNAL VISION	8.06	8.06	0.0
INTERNAL VISION	44.46	46.01	1.55
LEFT HAND	41.12	41.12	0.0
RIGHT HAND	19.10	19.10	0.0
COGNITION	50.04	50.00	-.04
AUDITORY	12.37	10.47	-1.90
VERBAL	.89	.89	0.0
WEIGHTED AVERAGE	33.63	33.53	-.10

Table C-2. Impact On Average Channel Activity Due To Data Link Implementation

NORMAL ILS APPROACH SCENARIO

CONVENTIONAL FLIGHT DECK

NON-FLYING PILOT
(RIGHT SEAT)

CHANNEL	PERCENT TASKING AVERAGED OVER ENTIRE SCENARIO CURRENT NAS VHF VOICE	 MODE-S DATA LINK	PERCENT INCREASE (DECREASE)
EXTERNAL VISION	8.20	6.26	-1.94
INTERNAL VISION	28.23	38.80	10.57
LEFT HAND	8.75	12.24	3.49
RIGHT HAND	6.88	2.09	-4.79
COGNITION	16.25	16.31	.06
AUDITORY	9.82	2.48	-7.34
VERBAL	7.96	9.04	1.08
WEIGHTED AVERAGE	18.59	19.12	.53

Table C-3. Impact On Average Channel Activity Due To Data Link Implementation

NORMAL ILS APPROACH SCENARIC

ADVANCED FLIGHT DECK

FLYING PILOT
(LEFT SEAT)

CHANNEL	PERCENT TASKING AVERAGED OVER ENTIRE SCENARIO		PERCENT INCREASE (DECREASE)
	CURRENT NAS VHF VOICE	MODE-S DATA LINK	
EXTERNAL VISION	3.03	3.03	0.0
INTERNAL VISION	48.67	50.38	1.71
LEFT HAND	1.07	1.07	0.0
RIGHT HAND	2.92	2.85	-.07
COGNITION	44.79	44.70	-.09
AUDITORY	12.30	10.39	-1.91
VERBAL	.75	.75	0.0
WEIGHTED AVERAGE	27.63	27.56	-.07

Table C-4. Impact On Average Channel Activity Due To Data Link Implementation

NORMAL ILS APPROACH SCENARIO

ADVANCED FLIGHT DECK

NON-FLYING PILOT
(RIGHT SEAT)

CHANNEL	PERCENT TASKING AVERAGED OVER ENTIRE SCENARIO		PERCENT INCREASE (DECREASE)
	CURRENT NAS VHF VOICE	MODE-S DATA LINK	
EXTERNAL VISION	7.35	5.90	-1.45
INTERNAL VISION	28.00	38.57	10.57
LEFT HAND	8.75	12.24	3.49
RIGHT HAND	6.88	2.09	-4.79
COGNITION	15.54	15.70	.16
AUDITORY	9.63	2.28	-7.35
VERBAL	7.86	8.94	1.08
WEIGHTED AVERAGE	18.07	18.74	.67

Table C-5. Impact On Average Channel Activity Due To Data Link Implementation

ILS APPROACH WITH WEATHER DEVIATION

CONVENTIONAL FLIGHT DECK

FLYING PILOT
(LEFT SEAT)

CHANNEL	PERCENT TASKING AVERAGED OVER ENTIRE SCENARIO		PERCENT INCREASE (DECREASE)
	CURRENT NAS VHF VOICE	MODE-S DATA LINK	
EXTERNAL VISION	8.18	8.18	0.0
INTERNAL VISION	43.63	45.38	1.75
LEFT HAND	42.09	42.09	0.0
RIGHT HAND	19.67	19.67	0.0
COGNITION	49.47	49.45	-.02
AUDITORY	13.73	11.79	-1.94
VERBAL	0.89	0.89	0.0
WEIGHTED AVERAGE	33.75	33.69	-.06

Table C-6. Impact On Average Channel Activity Due To Data Link Implementation

ILS APPROACH WITH WEATHER DEVIATION

CONVENTIONAL FLIGHT DECK

NON-FLYING PILOT
(RIGHT SEAT)

CHANNEL	PERCENT TASKING AVERAGED OVER ENTIRE SCENARIO CURRENT NAS VHF VOICE	PERCENT TASKING AVERAGED OVER ENTIRE SCENARIO MODE-S DATA LINK	PERCENT INCREASE (DECREASE)
EXTERNAL VISION	7.84	5.90	-1.94
INTERNAL VISION	28.40	41.73	13.33
LEFT HAND	8.75	13.82	5.07
RIGHT HAND	8.26	2.09	-6.17
COGNITION	16.52	16.66	.14
AUDITORY	11.18	2.63	-8.55
VERBAL	9.37	10.20	.83
WEIGHTED AVERAGE	19.39	20.27	.88

Table C-7. Impact On Average Channel Activity Due To Data Link Implementation

ILS APPROACH WITH WEATHER DEVIATION

ADVANCED FLIGHT DECK

FLYING PILOT
(LEFT SEAT)

CHANNEL	PERCENT TASKING AVERAGED OVER ENTIRE SCENARIO CURRENT NAS VHF VOICE	PERCENT TASKING AVERAGED OVER ENTIRE SCENARIO MODE-S DATA LINK	PERCENT INCREASE (DECREASE)
EXTERNAL VISION	3.03	3.03	0.0
INTERNAL VISION	47.07	50.57	3.50
LEFT HAND	1.07	1.07	0.0
RIGHT HAND	2.92	2.85	-.07
COGNITION	43.22	44.85	1.63
AUDITORY	13.66	11.71	-1.95
VERBAL	.75	.75	0.0
WEIGHTED AVERAGE	27.18	27.97	.79

Table C-8. Impact On Average Channel Activity Due To Data Link Implementation

ILS APPROACH WITH WEATHER DEVIATION

ADVANCED FLIGHT DECK

NON-FLYING PILOT
(RIGHT SEAT)

CHANNEL	PERCENT TASKING AVERAGED OVER ENTIRE SCENARIO		PERCENT INCREASE (DECREASE)
	CURRENT NAS VHF VOICE	MODE-S DATA LINK	
EXTERNAL VISION	6.99	5.53	-1.46
INTERNAL VISION	28.17	41.50	13.33
LEFT HAND	8.75	13.82	5.07
RIGHT HAND	8.26	2.09	-6.17
COGNITION	15.81	16.05	.24
AUDITORY	10.99	2.44	-8.55
VERBAL	9.27	10.11	.84
WEIGHTED AVERAGE	18.87	19.90	1.03

Table C-9. Impact On Average Channel Activity Due To Data Link Implementation

ILS MISSED APPROACH WITH RE-ROUTE

CONVENTIONAL FLIGHT DECK

FLYING PILOT
(LEFT SEAT)

CHANNEL	PERCENT TASKING AVERAGED OVER ENTIRE SCENARIO		PERCENT INCREASE (DECREASE)
	CURRENT NAS VHF VOICE	MODE-S DATA LINK	
EXTERNAL VISION	2.76	2.73	-.03
INTERNAL VISION	42.97	44.19	1.22
LEFT HAND	40.00	39.58	-.42
RIGHT HAND	18.41	18.21	-.20
COGNITION	47.03	46.13	-.90
AUDITORY	16.36	13.11	-3.25
VERBAL	4.62	1.92	-2.70
WEIGHTED AVERAGE	32.09	30.63	-1.46

Table C-10. Impact On Average Channel Activity Due To Data Link Implementation

ILS MISSED APPROACH WITH RE-ROUTE

CONVENTIONAL FLIGHT DECK

NON-FLYING PILOT
(RIGHT SEAT)

CHANNEL	PERCENT TASKING AVERAGED OVER ENTIRE SCENARIO CURRENT NAS VHF VOICE	MODE-S DATA LINK	PERCENT INCREASE (DECREASE)
EXTERNAL VISION	6.92	5.03	-1.89
INTERNAL VISION	30.13	43.24	13.11
LEFT HAND	10.38	14.90	4.52
RIGHT HAND	7.52	2.52	-5.00
COGNITION	15.41	15.35	-.06
AUDITORY	14.03	3.41	-10.62
VERBAL	8.73	11.95	3.22
WEIGHTED AVERAGE	19.92	20.83	.91

Table C-11. Impact On Average Channel Activity Due To Data Link Implementation

ILS MISSED APPROACH WITH RE-ROUTE

ADVANCED FLIGHT DECK

FLYING PILOT
(LEFT SEAT)

CHANNEL	PERCENT TASKING AVERAGED OVER ENTIRE SCENARIO		PERCENT INCREASE (DECREASE)
	CURRENT NAS VHF VOICE	MODE-S DATA LINK	
EXTERNAL VISION	.99	.99	0.0
INTERNAL VISION	47.06	49.68	2.62
LEFT HAND	10.89	5.94	-4.95
RIGHT HAND	8.15	6.04	-2.11
COGNITION	44.04	43.68	-.36
AUDITORY	15.31	12.39	-2.92
VERBAL	4.20	1.67	-2.53
WEIGHTED AVERAGE	29.09	27.85	-1.24

Table C-12. Impact On Average Channel Activity Due To Data Link Implementation

ILS MISSED APPROACH WITH RE-ROUTE

ADVANCED FLIGHT DECK

NON-FLYING PILOT
(RIGHT SEAT)

CHANNEL	PERCENT TASKING AVERAGED OVER ENTIRE SCENARIO		PERCENT INCREASE (DECREASE)
	CURRENT NAS VHF VOICE	MODE-S DATA LINK	
EXTERNAL VISION	6.76	5.27	-1.49
INTERNAL VISION	33.06	41.97	8.91
LEFT HAND	9.76	13.99	4.23
RIGHT HAND	12.71	2.40	-10.31
COGNITION	13.66	15.71	2.05
AUDITORY	12.99	3.04	-9.95
VERBAL	8.11	11.26	3.15
WEIGHTED AVERAGE	20.05	20.34	.29

Table C-13. Impact On Average Channel Activity Due To Data Link Implementation

ILS APPROACH WITH TCAS ENCOUNTER

CONVENTIONAL FLIGHT DECK

FLYING PILOT
(LEFT SEAT)

CHANNEL	PERCENT TASKING AVERAGED OVER ENTIRE SCENARIO		PERCENT INCREASE (DECREASE)
	CURRENT NAS VHF VOICE	MODE-S DATA LINK	
EXTERNAL VISION	8.06	10.39	2.33
INTERNAL VISION	44.46	45.31	.85
LEFT HAND	41.12	44.61	3.49
RIGHT HAND	19.10	20.58	1.48
COGNITION	50.04	50.86	.82
AUDITORY	12.37	14.84	2.47
VERBAL	0.89	1.28	.39
WEIGHTED AVERAGE	33.63	35.66	2.03

Table C-14. Impact On Average Channel Activity Due To Data Link Implementation

ILS APPROACH WITH TCAS ENCOUNTER

CONVENTIONAL FLIGHT DECK

NON-FLYING PILOT
(RIGHT SEAT)

CHANNEL	PERCENT TASKING AVERAGED OVER ENTIRE SCENARIO		PERCENT INCREASE (DECREASE)
	CURRENT NAS VHF VOICE	MODE-S DATA LINK	
EXTERNAL VISION	8.20	8.45	.25
INTERNAL VISION	28.23	30.48	2.25
LEFT HAND	8.75	9.02	.27
RIGHT HAND	6.88	7.85	.97
COGNITION	16.25	18.11	1.86
AUDITORY	9.82	11.28	1.46
VERBAL	7.96	10.33	2.37
WEIGHTED AVERAGE	18.59	20.72	2.13

Table C-15. Impact On Average Channel Activity Due To Data Link Implementation

ILS APPROACH WITH TCAS ENCOUNTER

ADVANCED FLIGHT DECK

FLYING PILOT
(LEFT SEAT)

CHANNEL	PERCENT TASKING AVERAGED OVER ENTIRE SCENARIO CURRENT NAS VHF VOICE	MODE-S DATA LINK	PERCENT INCREASE (DECREASE)
EXTERNAL VISION	3.03	5.36	2.33
INTERNAL VISION	48.67	49.52	.85
LEFT HAND	1.07	4.57	3.50
RIGHT HAND	2.92	4.72	1.80
COGNITION	44.79	45.61	.82
AUDITORY	12.30	14.77	2.47
VERBAL	.75	1.14	.39
WEIGHTED AVERAGE	27.63	29.68	2.05

Table C-16. Impact On Average Channel Activity Due To Data Link Implementation

ILS APPROACH WITH TCAS ENCOUNTER

ADVANCED FLIGHT DECK

NON-FLYING PILOT
(RIGHT SEAT)

CHANNEL	PERCENT TASKING AVERAGED OVER ENTIRE SCENARIO		PERCENT INCREASE (DECREASE)
	CURRENT NAS VHF VOICE	MODE-S DATA LINK	
EXTERNAL VISION	7.35	7.60	.25
INTERNAL VISION	28.00	30.25	2.25
LEFT HAND	8.75	9.02	.27
RIGHT HAND	6.88	7.85	.97
COGNITION	15.54	17.41	1.87
AUDITORY	9.63	11.09	1.46
VERBAL	7.86	10.23	2.37
WEIGHTED AVERAGE	18.07	20.20	2.13

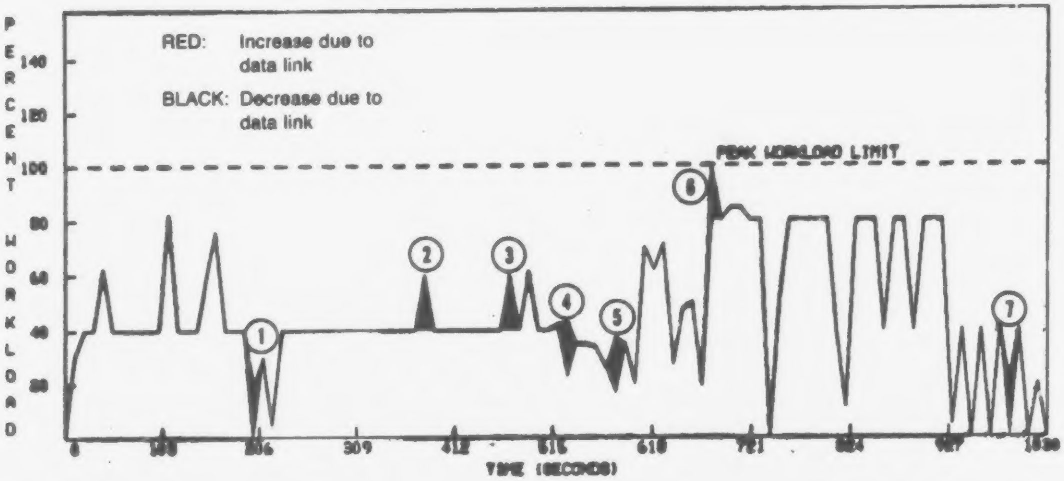

Figure C-1. Conventional Flight Deck, Pilot Tasking, Internal Vision Channel Normal ILS Approach

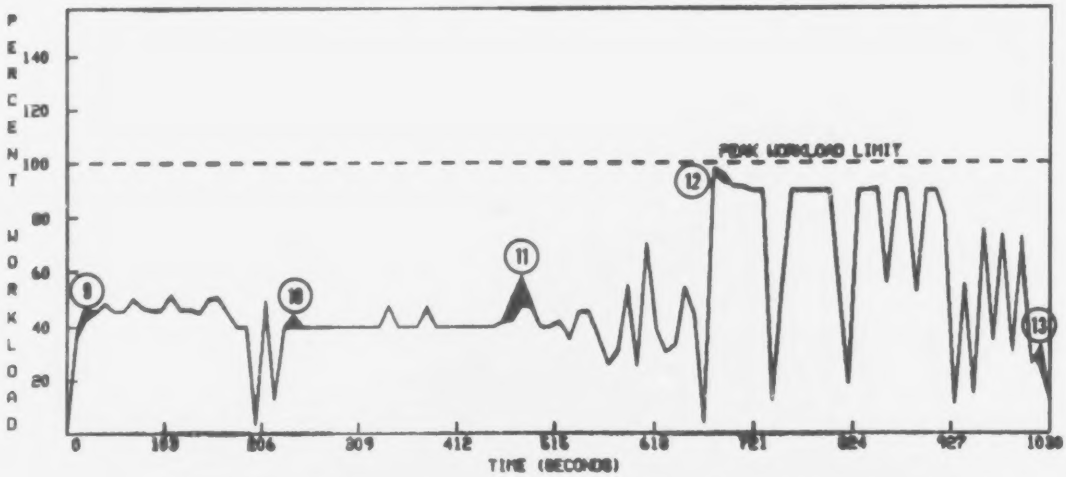

Figure C-2. Conventional Flight Deck, Pilot Tasking, Cognitive Channel Normal ILS Approach

Note: Circled numbers are referenced on pages C3 and C4.

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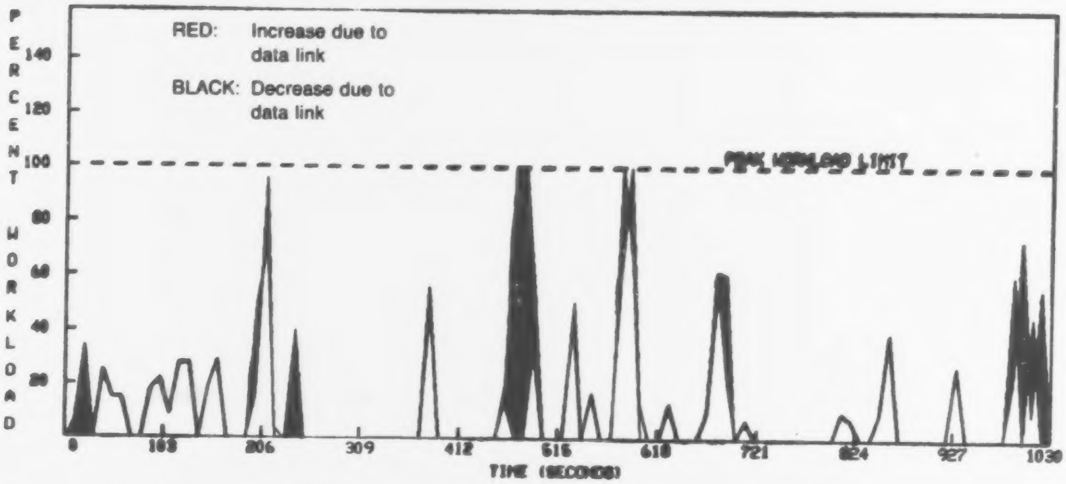

Figure C-3. Conventional Flight Deck, Pilot Tasking, Auditory Channel Normal ILS Approach

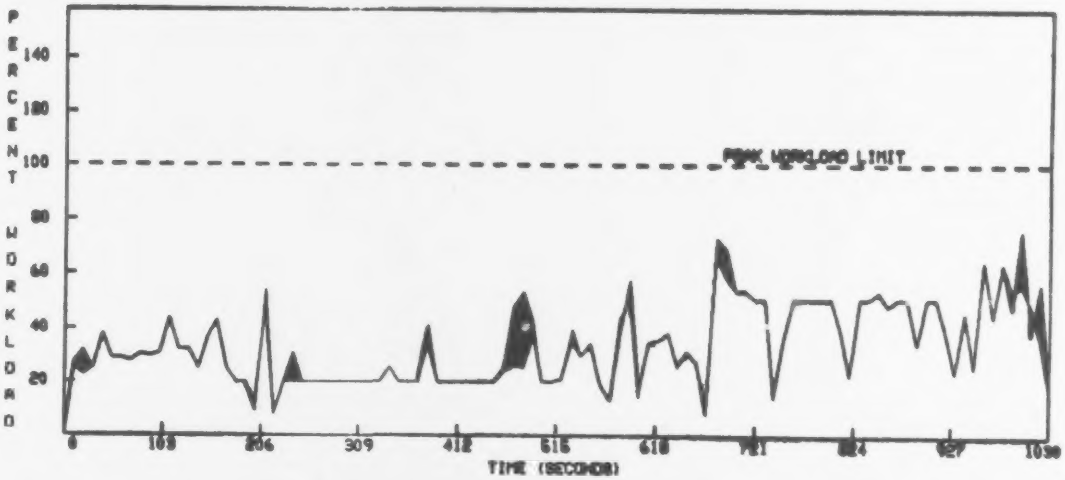

Figure C-4. Conventional Flight Deck, Pilot Tasking, Weighted Channel Average Normal ILS Approach

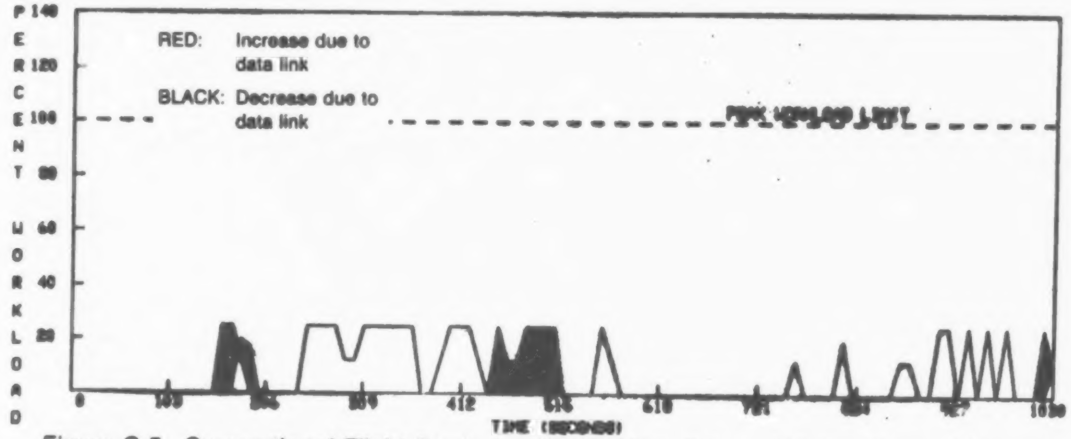

Figure C-5. Conventional Flight Deck, Copilot Tasking, External Vision Channel Normal ILS Approach

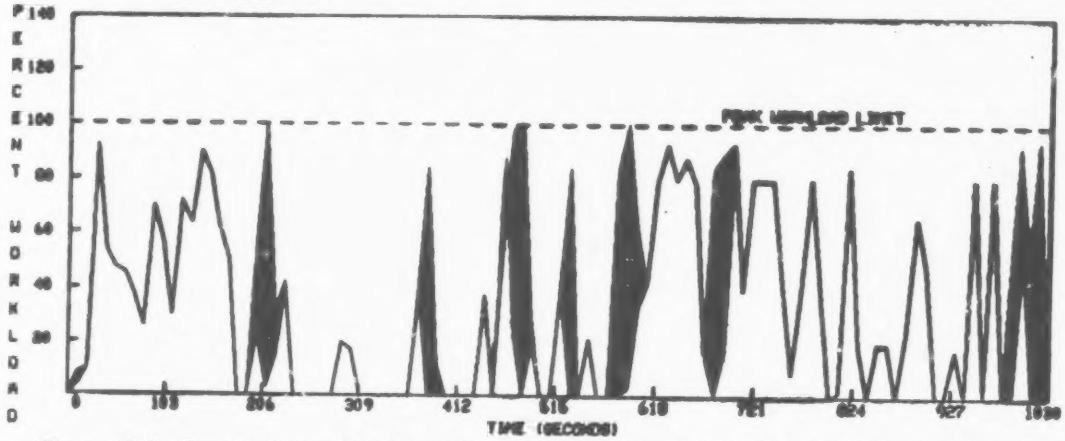

Figure C-6. Conventional Flight Deck, Copilot Tasking, Internal Vision Channel Normal ILS Approach

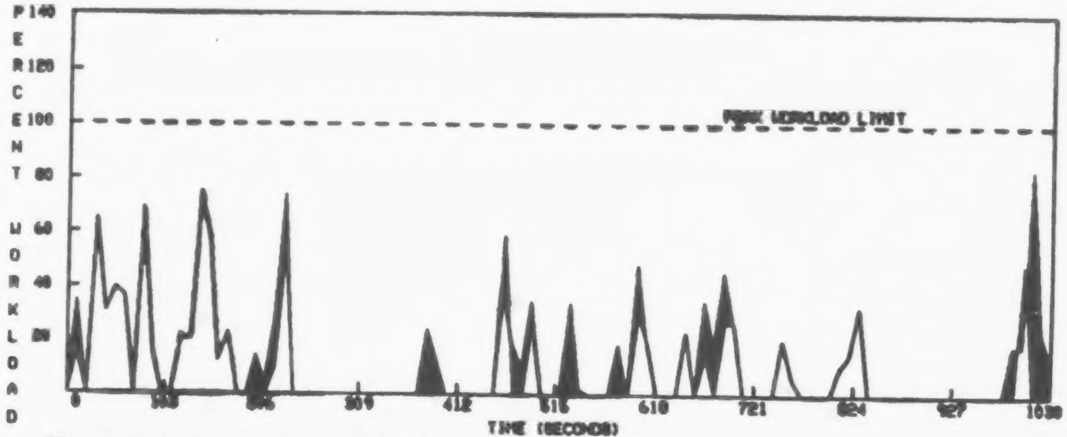

Figure C-7. Conventional Flight Deck, Copilot Tasking, Left Hand Channel Normal ILS Approach

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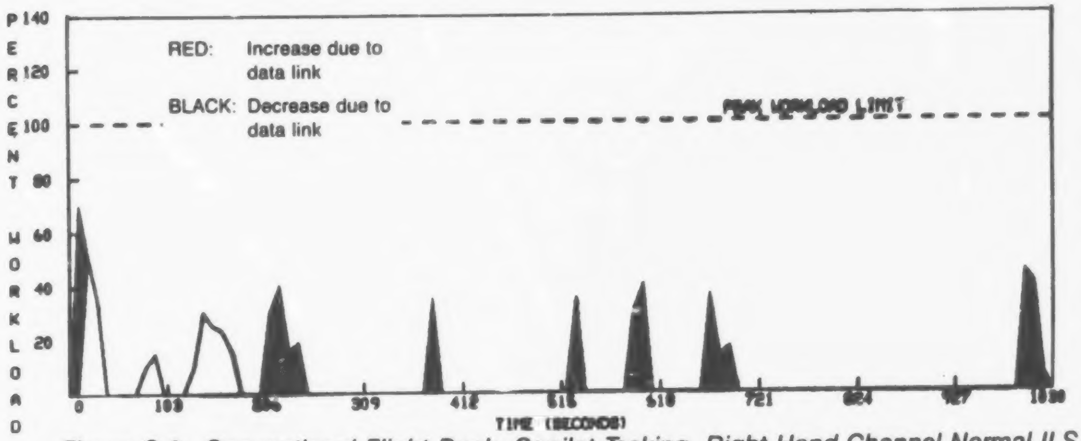

Figure C-8. Conventional Flight Deck, Copilot Tasking, Right Hand Channel Normal ILS Approach

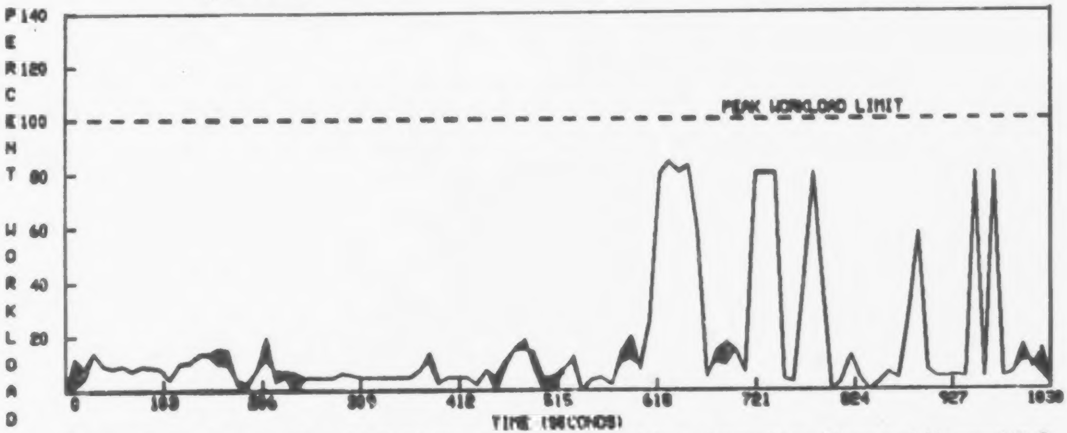

Figure C-9. Conventional Flight Deck, Copilot Tasking, Cognitive Channel Normal ILS Approach

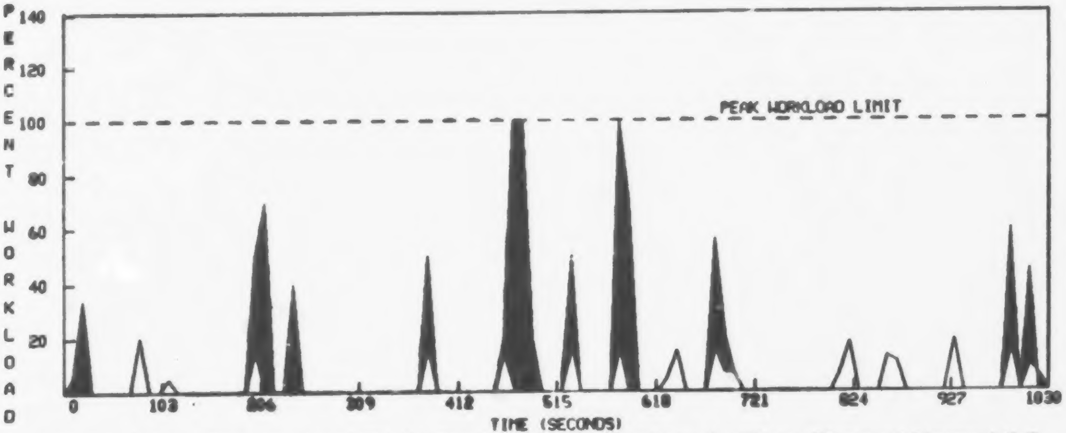

Figure C-10. Conventional Flight Deck, Copilot Tasking, Auditory Channel Normal ILS Approach

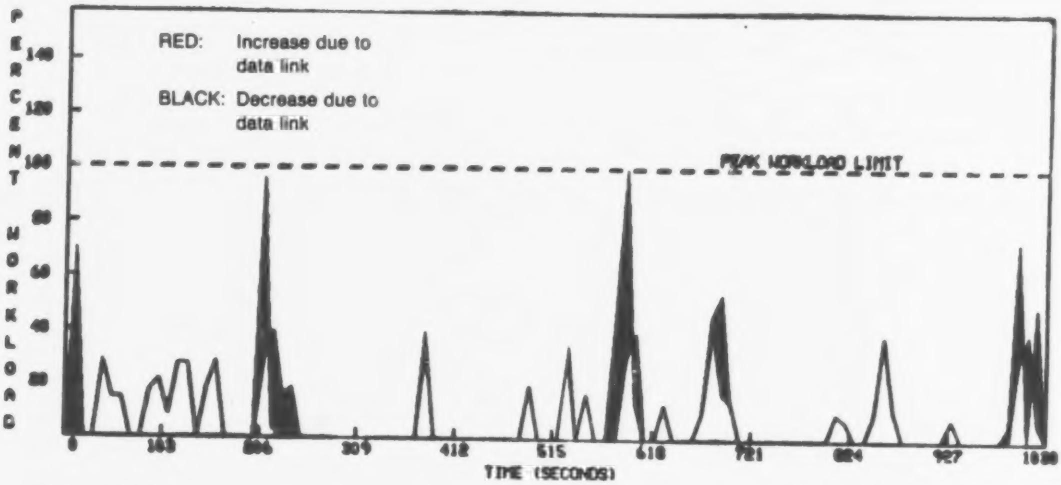

Figure C-11. Conventional Flight Deck, Copilot Tasking, Verbal Channel Normal ILS Approach

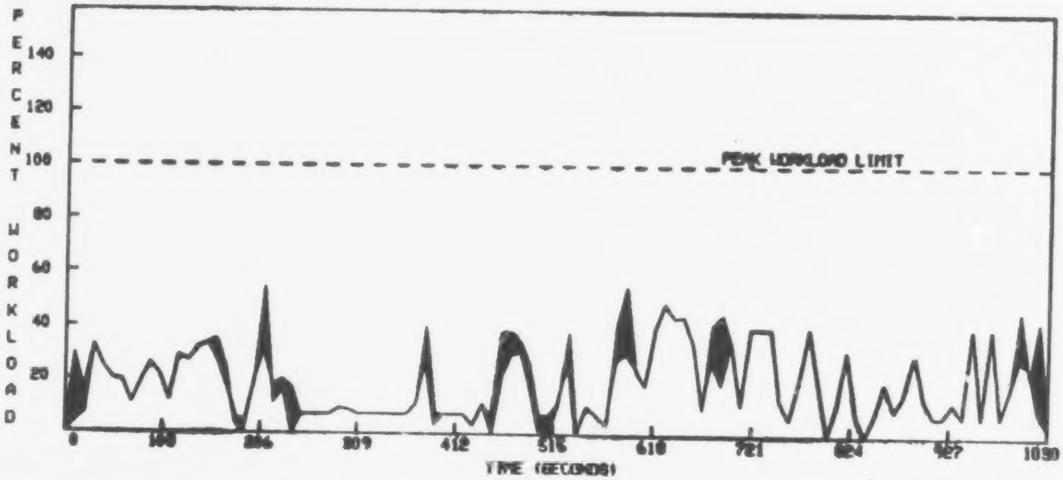

Figure C-12. Conventional Flight Deck, Copilot Tasking, Weighted Channel Average Normal ILS Approach

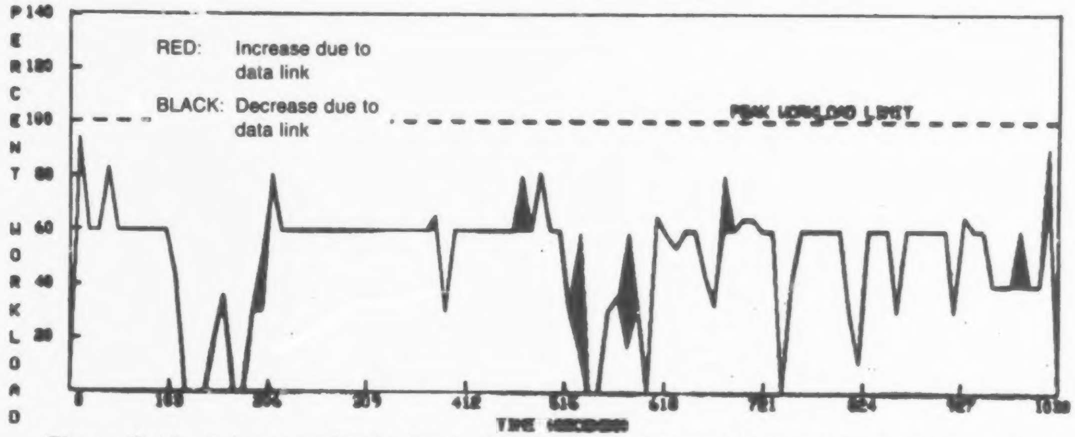

Figure C-13. Advanced Flight Deck, Pilot Tasking, Internal Vision Channel Normal ILS Approach

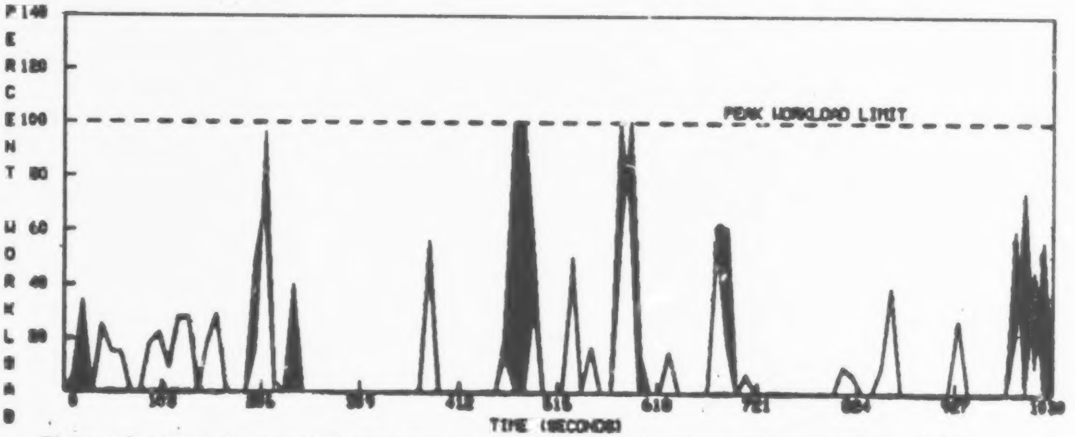

Figure C-14. Advanced Flight Deck, Pilot Tasking, Auditory Channel Normal ILS Approach

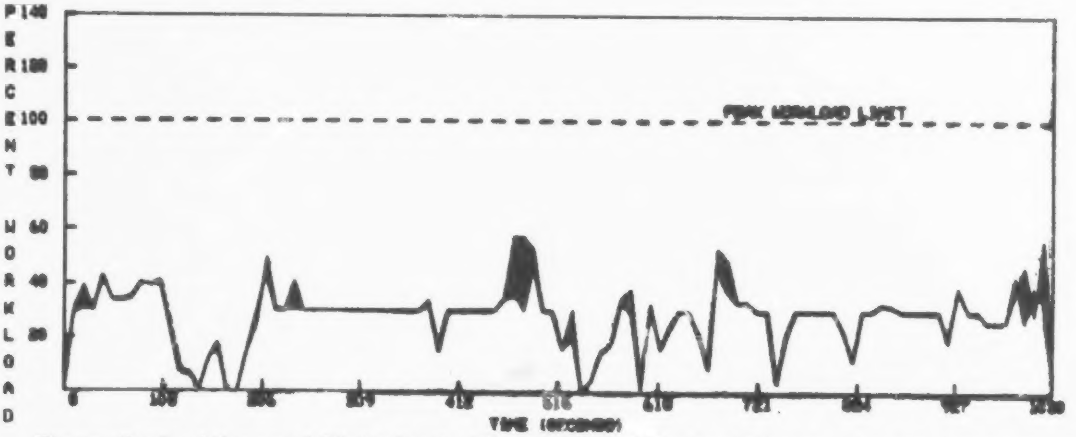

Figure C-15. Advanced Flight Deck, Pilot Tasking, Weighted Channel Average Normal ILS Approach

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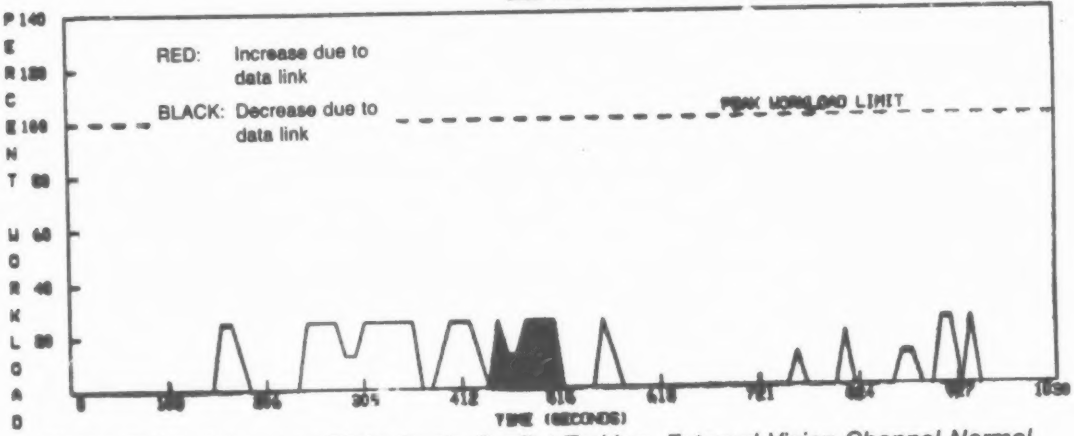

Figure C-16. Advanced Flight Deck, Copilot Tasking, External Vision Channel Normal ILS Approach

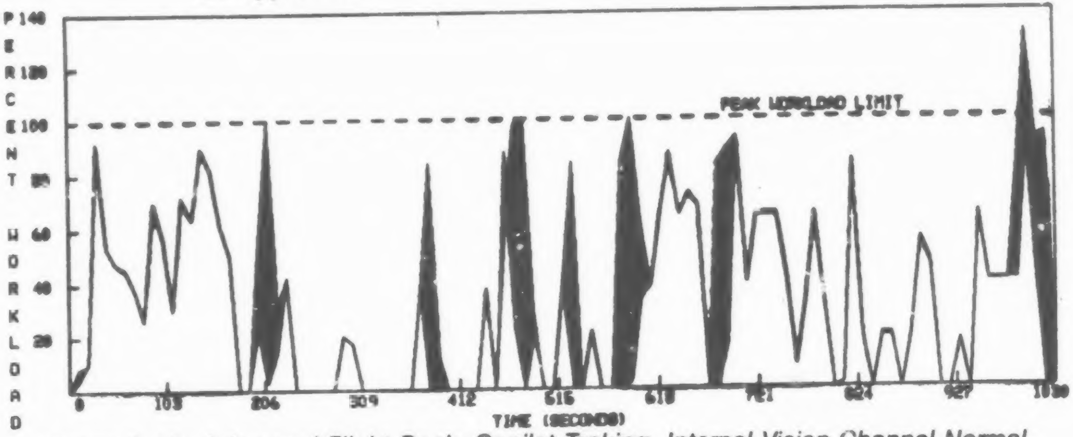

Figure C-17. Advanced Flight Deck, Copilot Tasking, Internal Vision Channel Normal ILS Approach

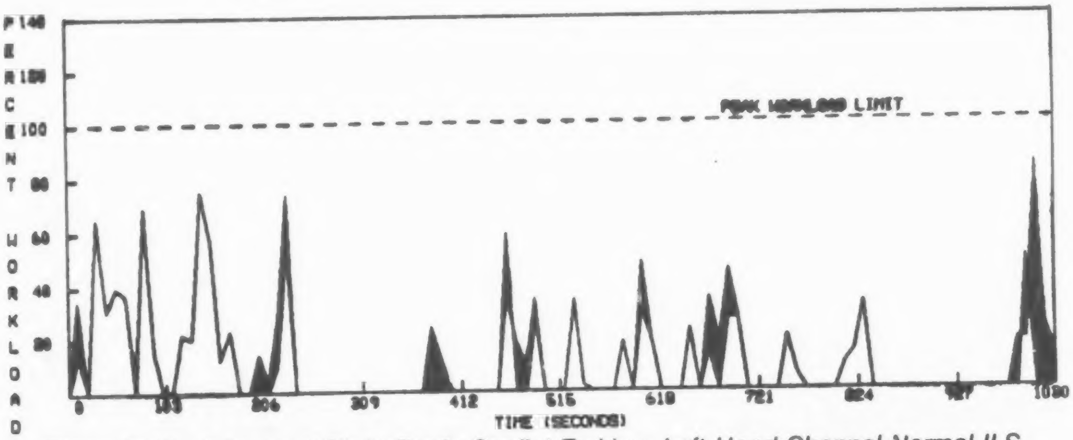

Figure C-18. Advanced Flight Deck, Copilot Tasking, Left Hand Channel Normal ILS Approach

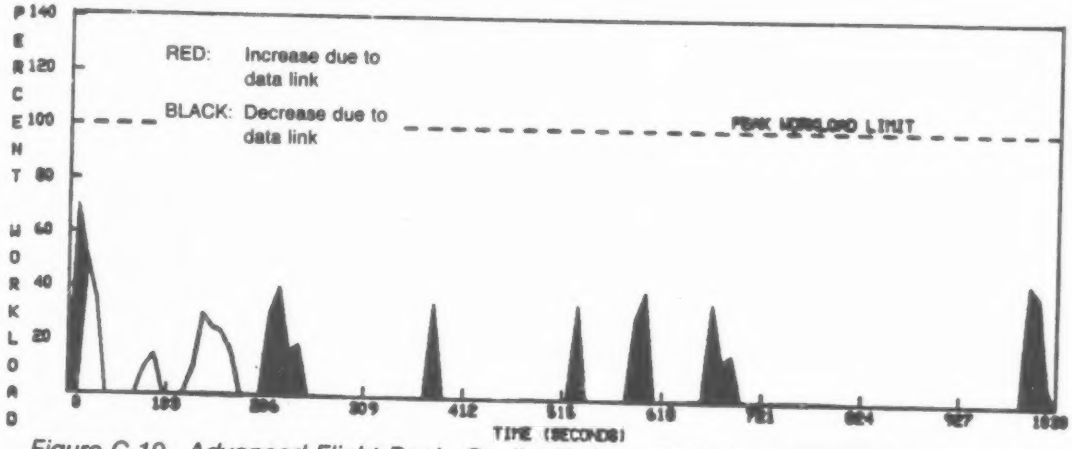

Figure C-19. Advanced Flight Deck, Copilot Tasking, Right Hand Channel Normal ILS Approach

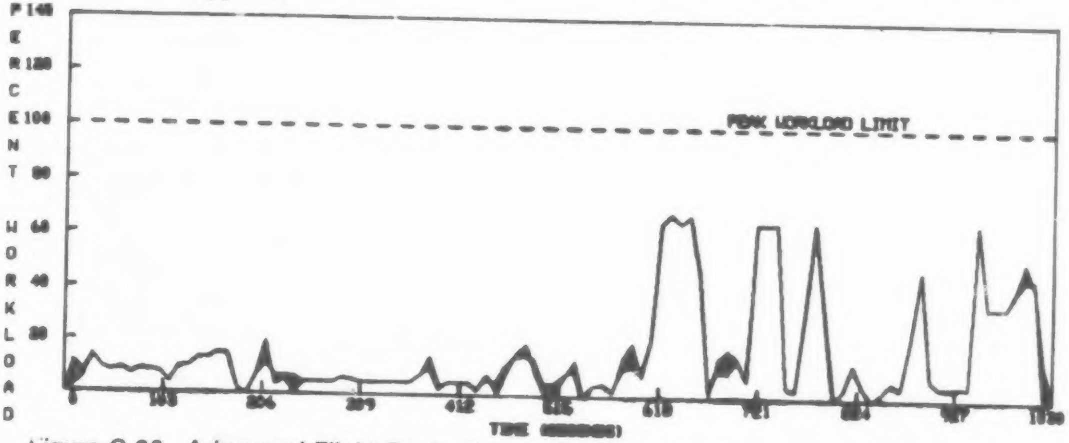

Figure C-20. Advanced Flight Deck, Copilot Tasking, Cognitive Channel Normal ILS Approach

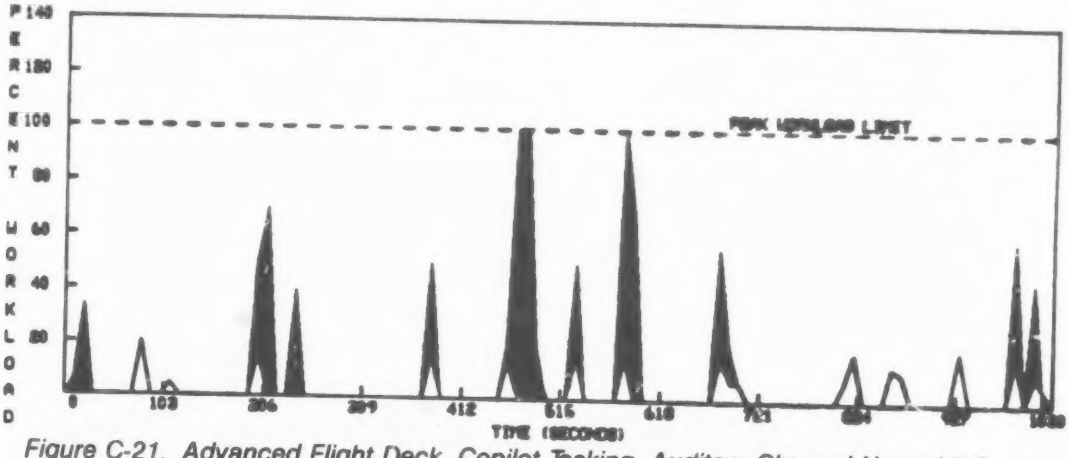

Figure C-21. Advanced Flight Deck, Copilot Tasking, Auditory Channel Normal ILS Approach

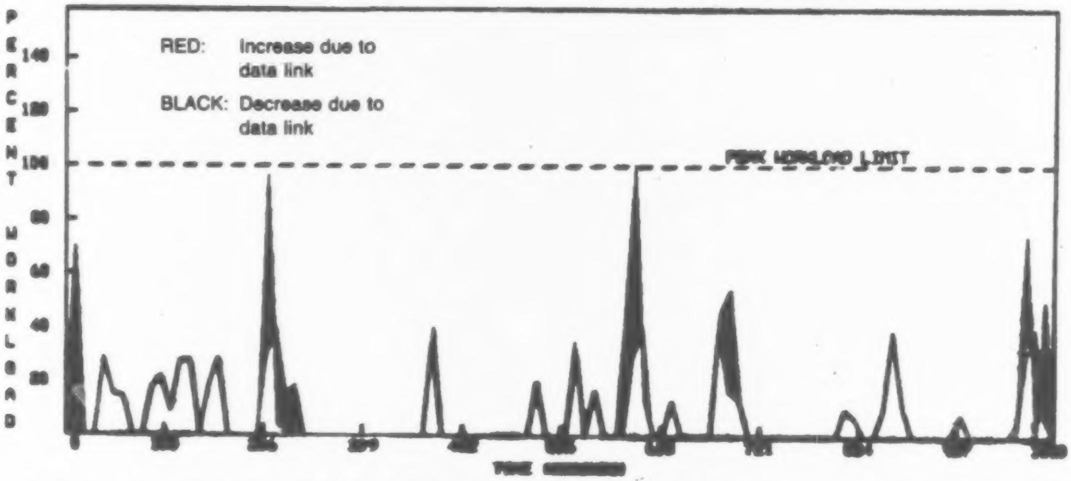

Figure C-22. Advanced Flight Deck, Copilot Tasking, Verbal Channel Normal ILS Approach

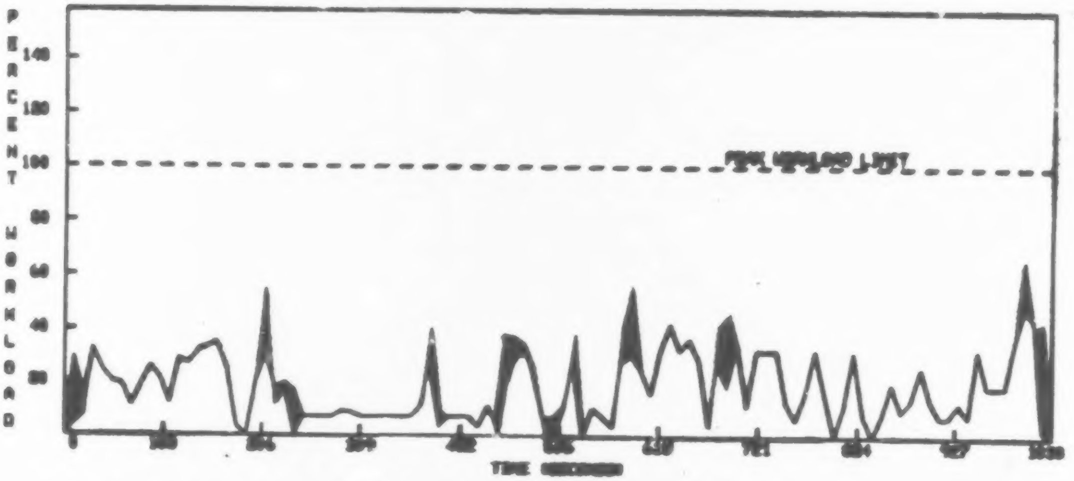

Figure C-23. Advanced Flight Deck, Copilot Tasking, Weighted Channel Average Normal ILS Approach

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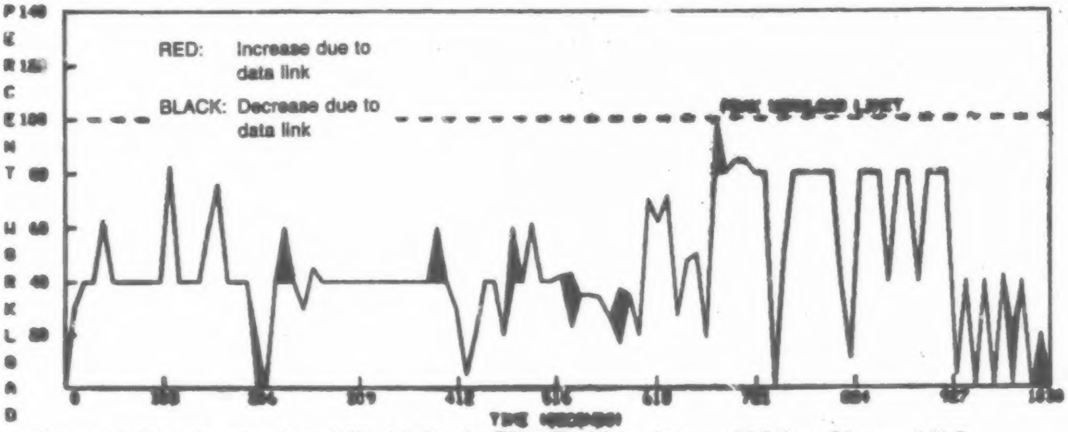

Figure C-24. Conventional Flight Deck, Pilot Tasking, Internal Vision Channel ILS Approach With Weather Deviation

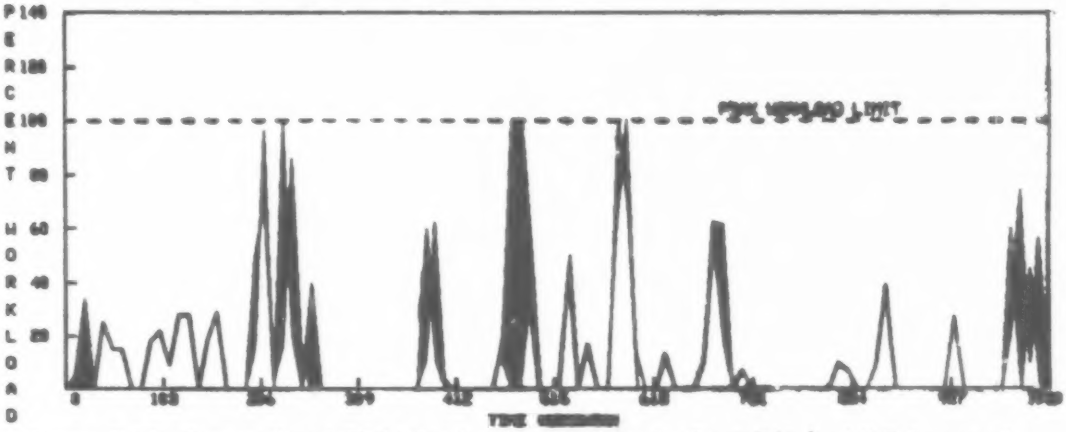

Figure C-25. Conventional Flight Deck, Pilot Tasking, Auditory Channel ILS Approach With Weather Deviation

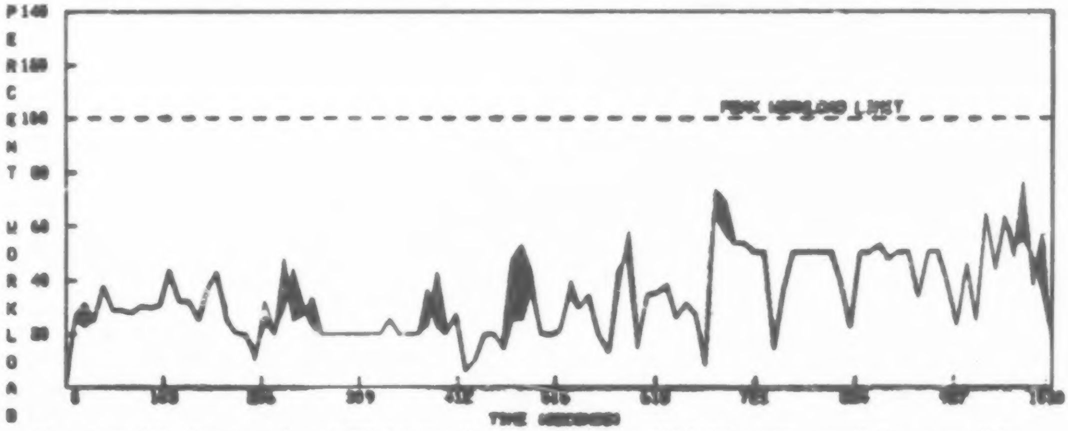

Figure C-26. Conventional Flight Deck, Pilot Tasking, Weighted Channel Average ILS Approach With Weather Deviation

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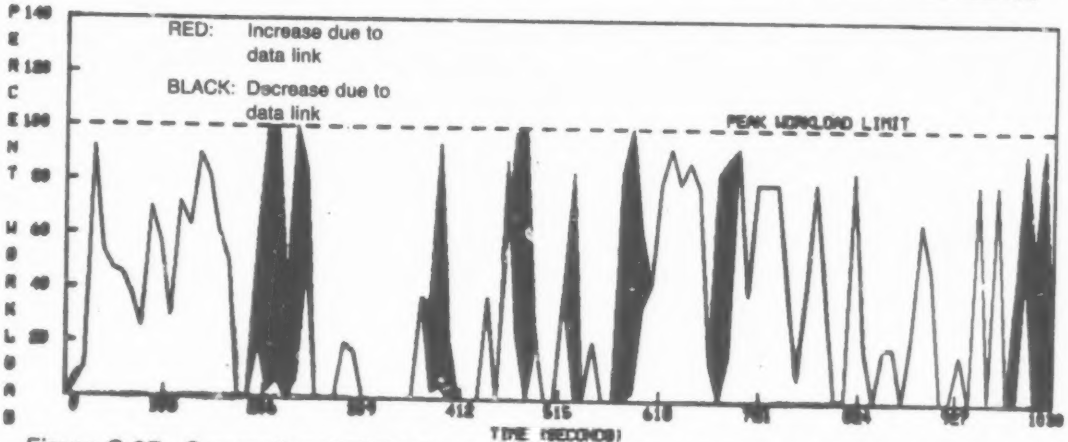


Figure C-27. Conventional Flight Deck, Copilot Tasking, Internal Vision Channel ILS Approach With Weather Deviation

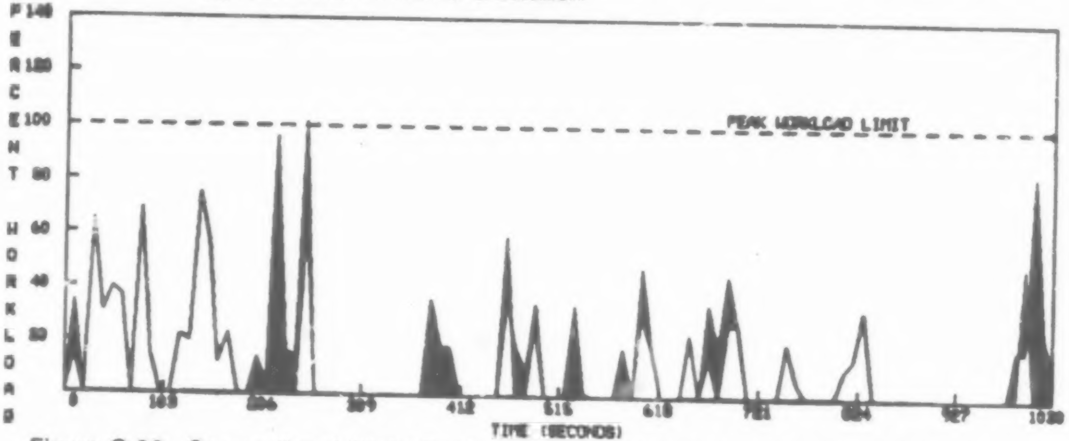


Figure C-28. Conventional Flight Deck, Copilot Tasking, Left Hand Channel ILS Approach With Weather Deviation

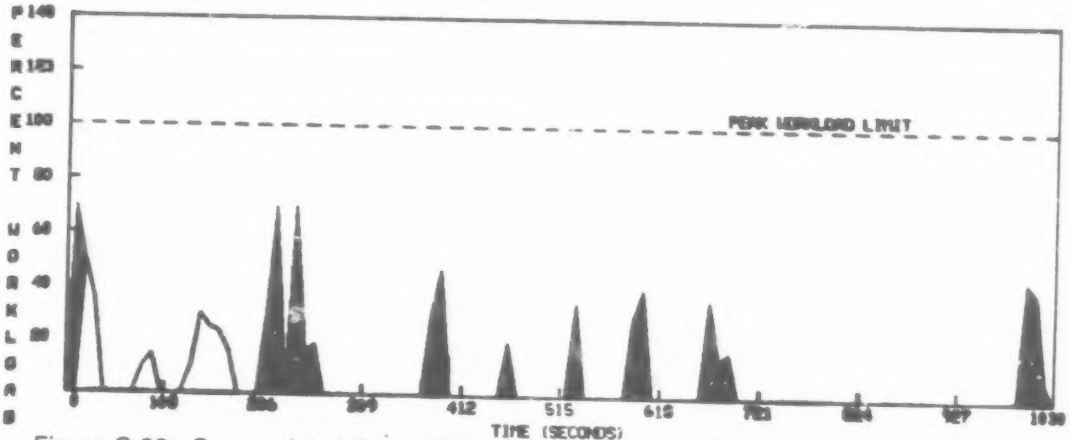


Figure C-29. Conventional Flight Deck, Copilot Tasking, Right Hand Channel ILS Approach With Weather Deviation

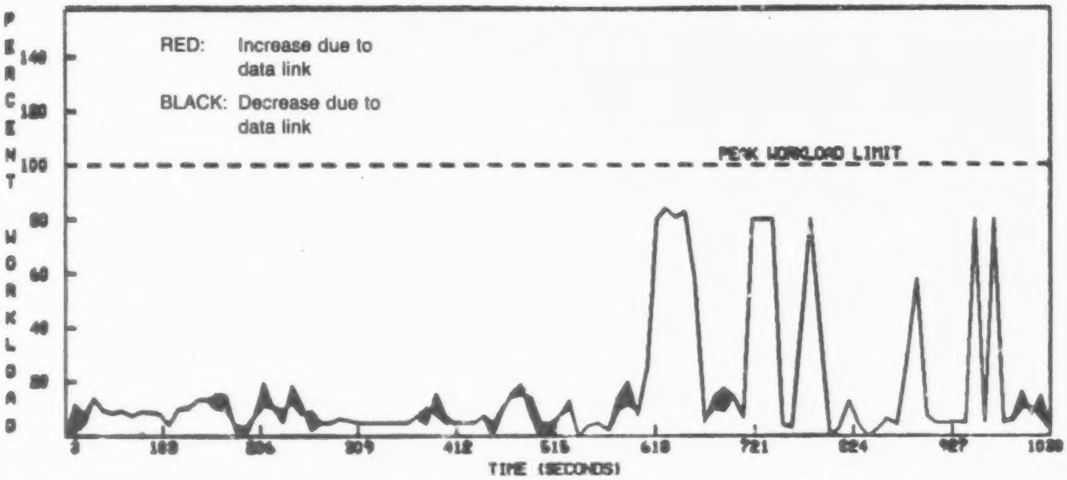


Figure C-30. Conventional Flight Deck, Copilot Tasking, Cognitive Channel ILS Approach With Weather Deviation

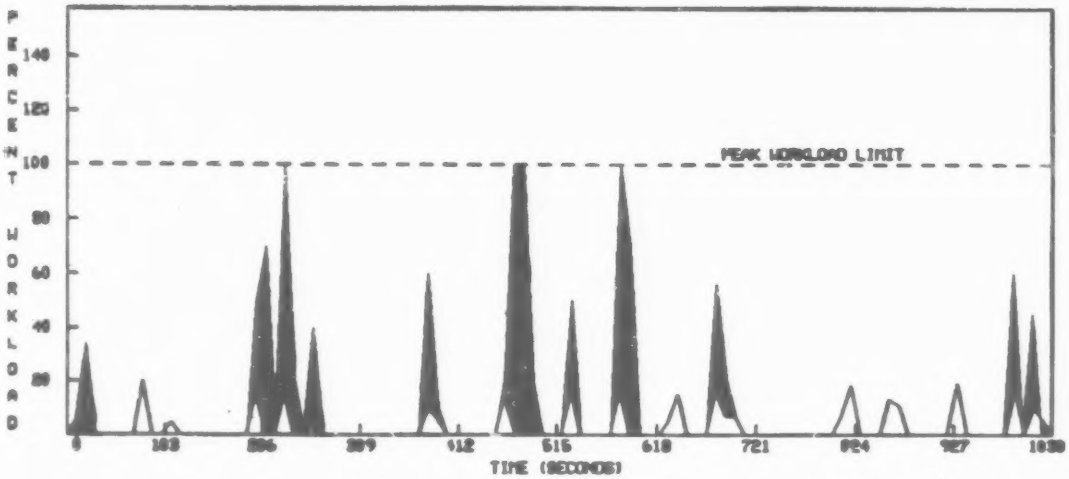


Figure C-31. Conventional Flight Deck, Copilot Tasking, Auditory Channel ILS Approach With Weather Deviation

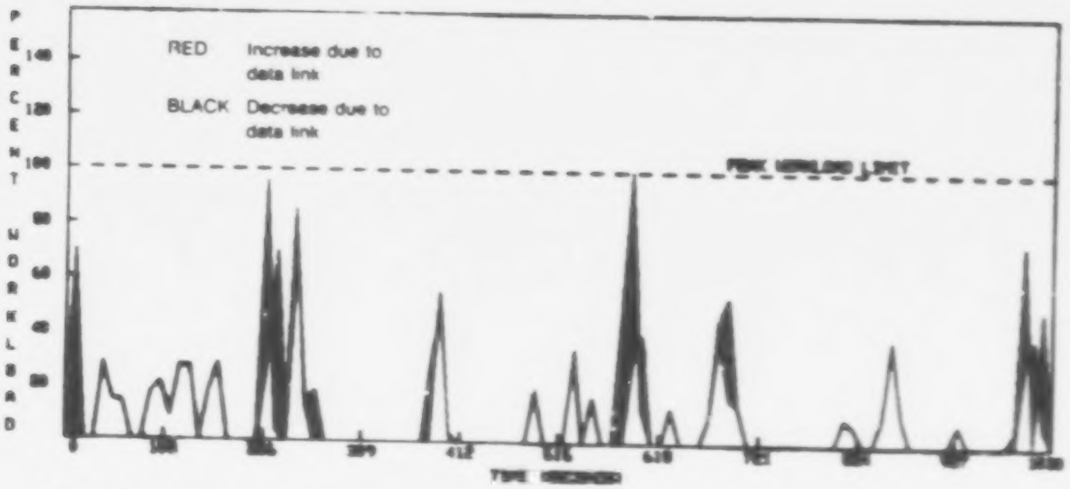


Figure C-32. Conventional Flight Deck, Copilot Tasking, Verbal Channel ILS Approach With Weather Deviation

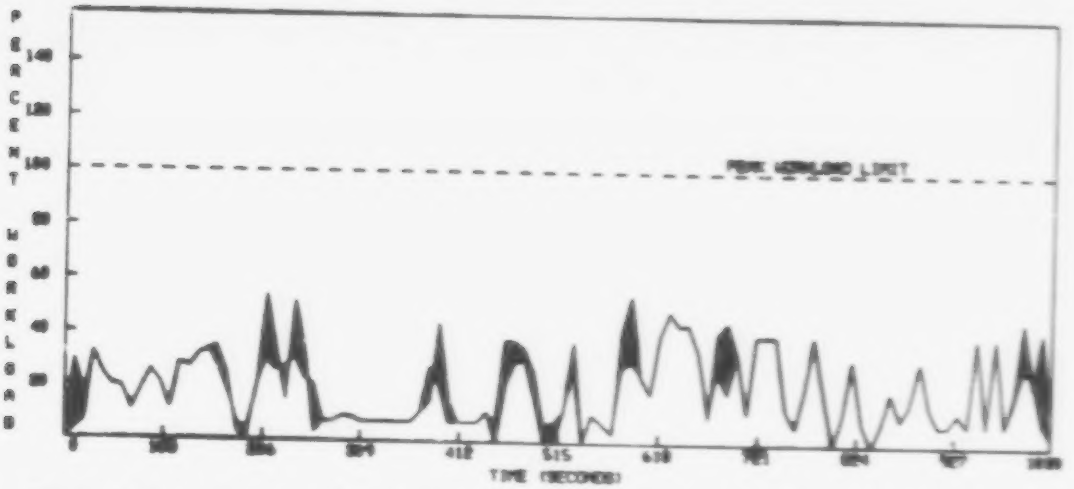


Figure C-33. Conventional Flight Deck, Copilot Tasking, Weighted Channel Average ILS Approach With Weather Deviation

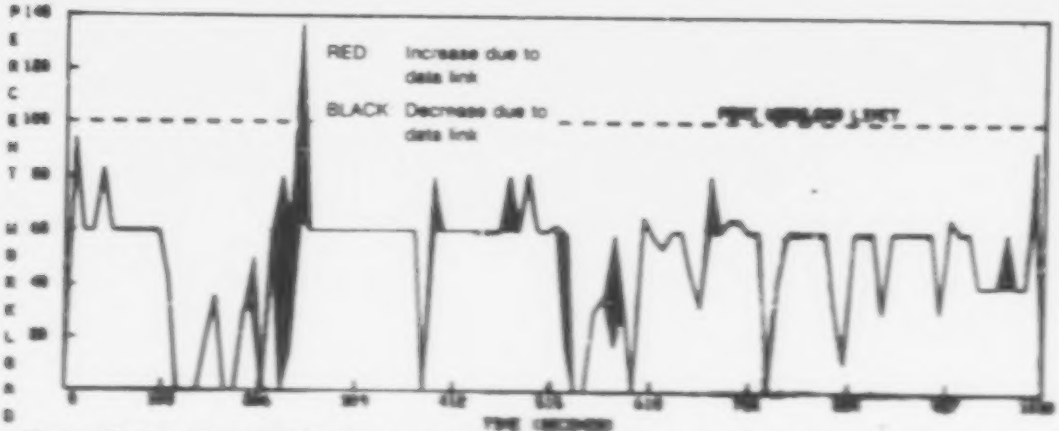


Figure C-34. Advanced Flight Deck, Pilot Tasking, Internal Vision Channel ILS Approach With Weather Deviation

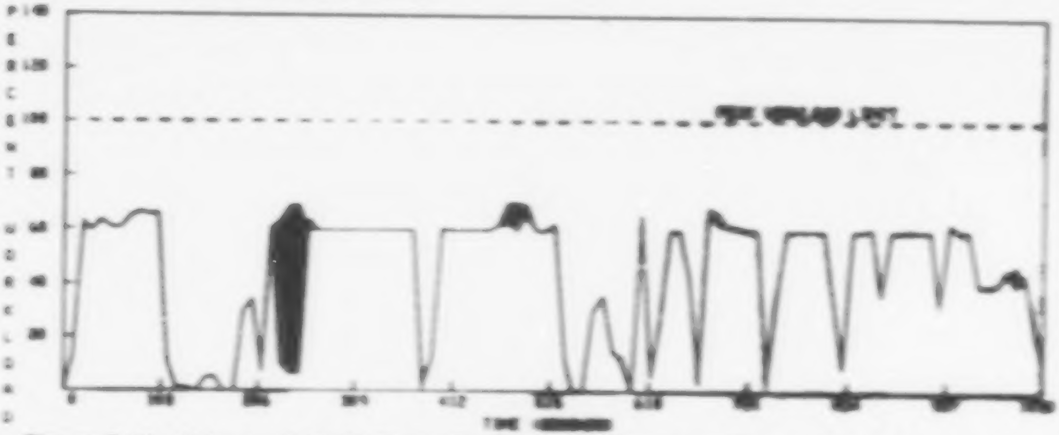


Figure C-35. Advanced Flight Deck, Pilot Tasking, Cognitive Channel ILS Approach With Weather Deviation

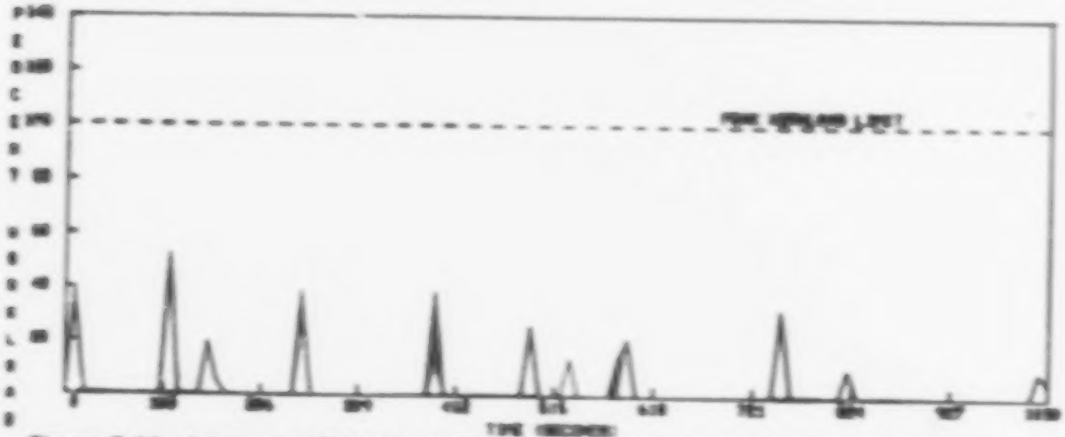


Figure C-36. Advanced Flight Deck, Pilot Tasking, Right Hand Channel ILS Approach With Weather Deviation

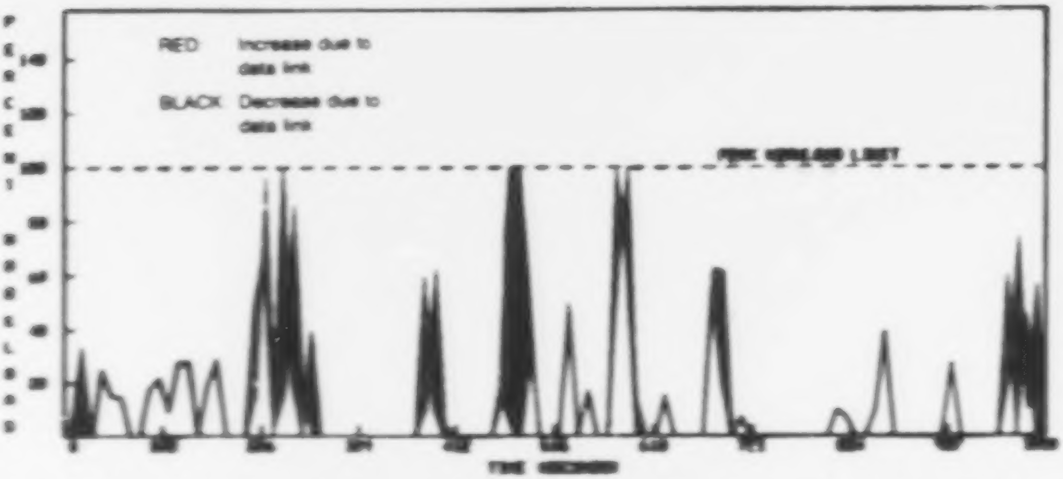


Figure C-37. Advanced Flight Deck, Pilot Tasking, Auditory Channel ILS Approach With Weather Deviation

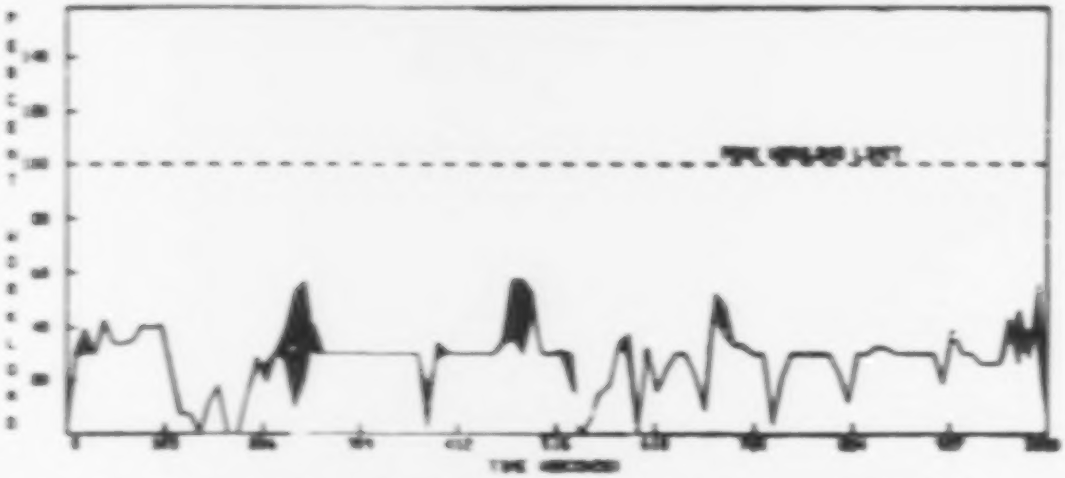


Figure C-38. Advanced Flight Deck, Pilot Tasking, Weighted Channel Average ILS Approach With Weather Deviation

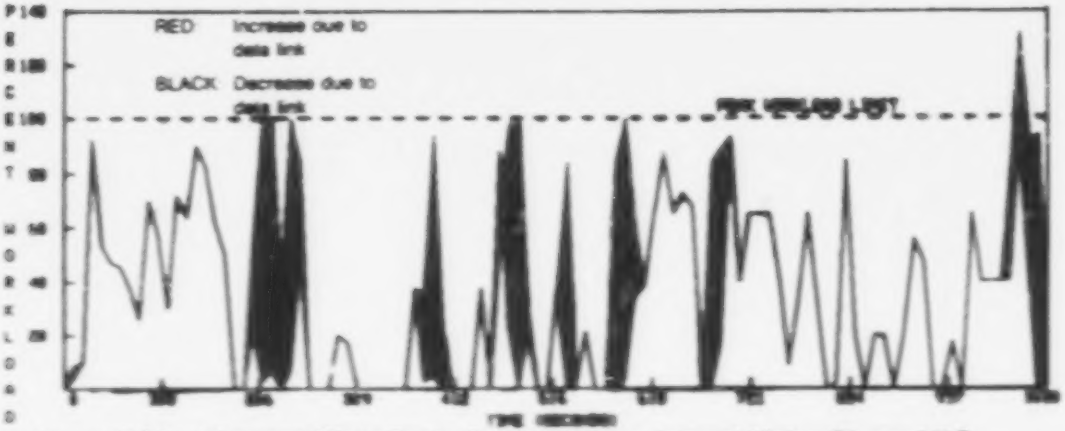


Figure C-39. Advanced Flight Deck, Copilot Tasking, Internal Vision Channel ILS Approach With Weather Deviation

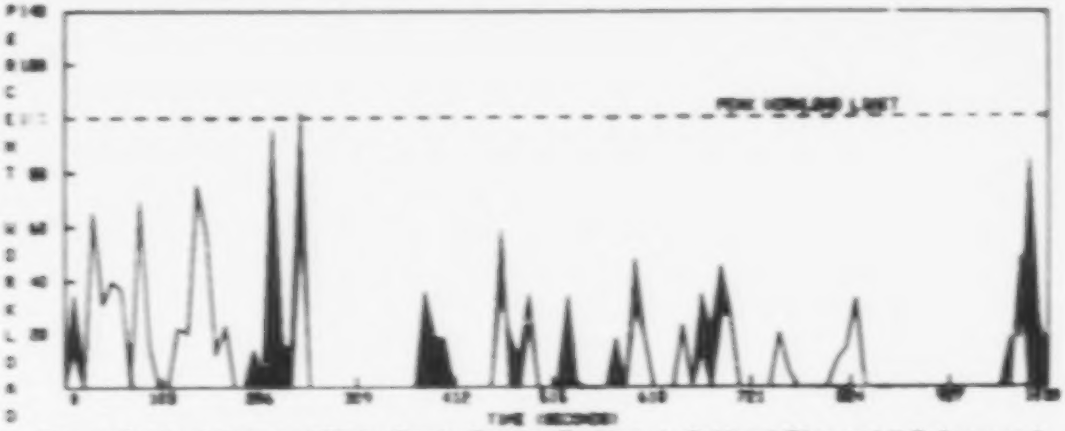


Figure C-40. Advanced Flight Deck, Copilot Tasking, Left Hand Channel ILS Approach With Weather Deviation

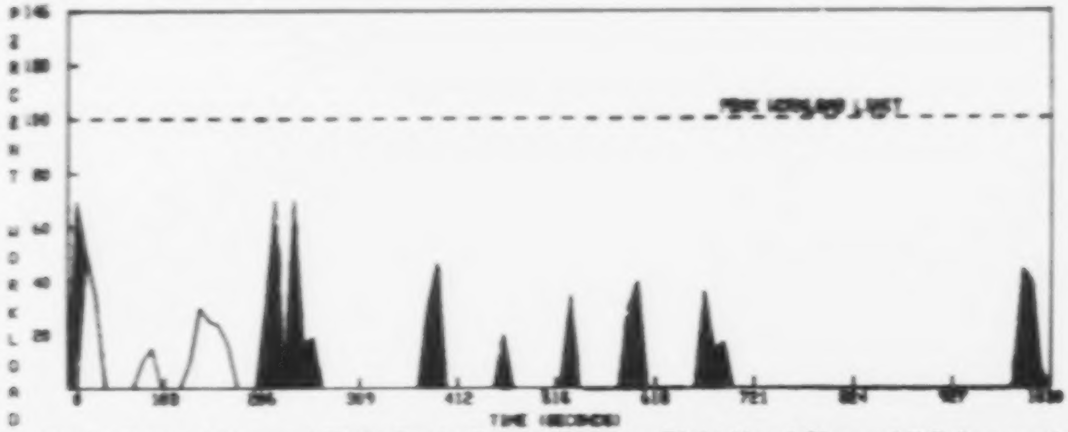


Figure C-41. Advanced Flight Deck, Copilot Tasking, Right Hand Channel ILS Approach With Weather Deviation

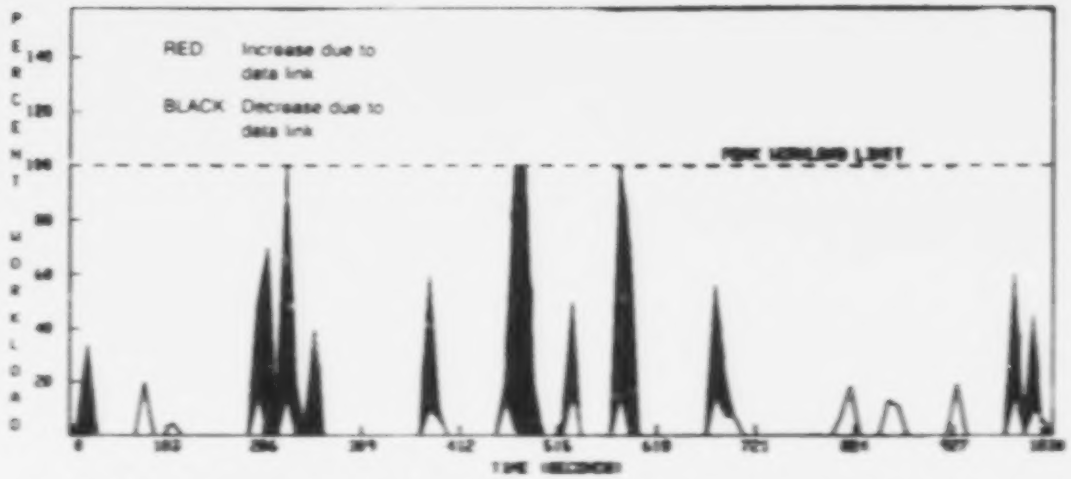


Figure C-42. Advanced Flight Deck, Copilot Tasking, Auditory Channel ILS Approach With Weather Deviation

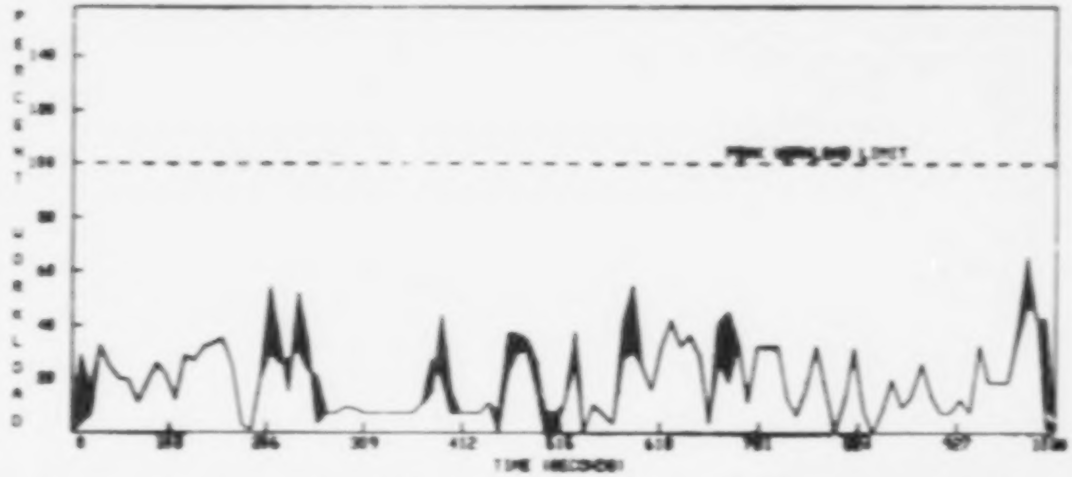


Figure C-43. Advanced Flight Deck, Copilot Tasking, Weighted Channel Average ILS Approach With Weather Deviation

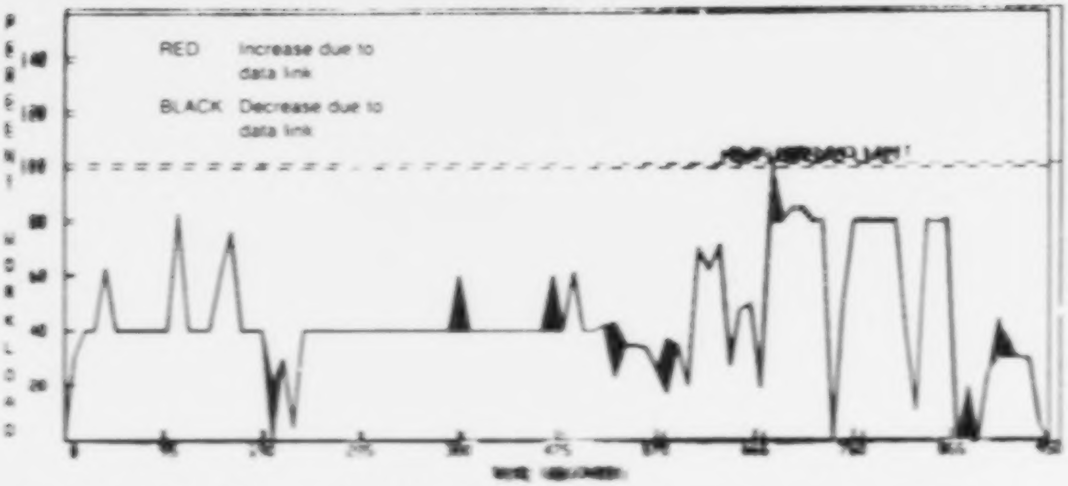


Figure C-44. Conventional Flight Deck, Pilot Tasking, Vision Internal Channel ILS Missed Approach With Reroute

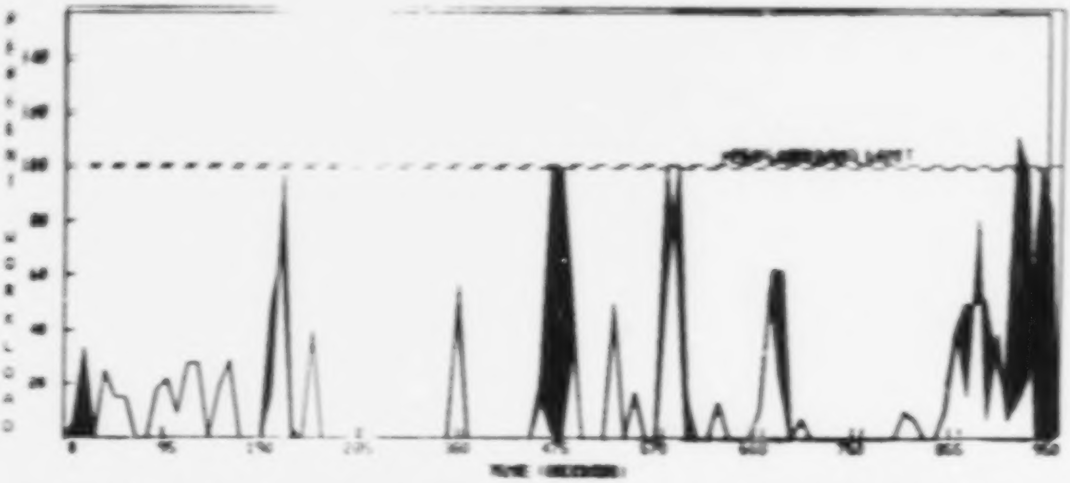


Figure C-45. Conventional Flight Deck, Pilot Tasking, Auditory Channel ILS Missed Approach With Reroute

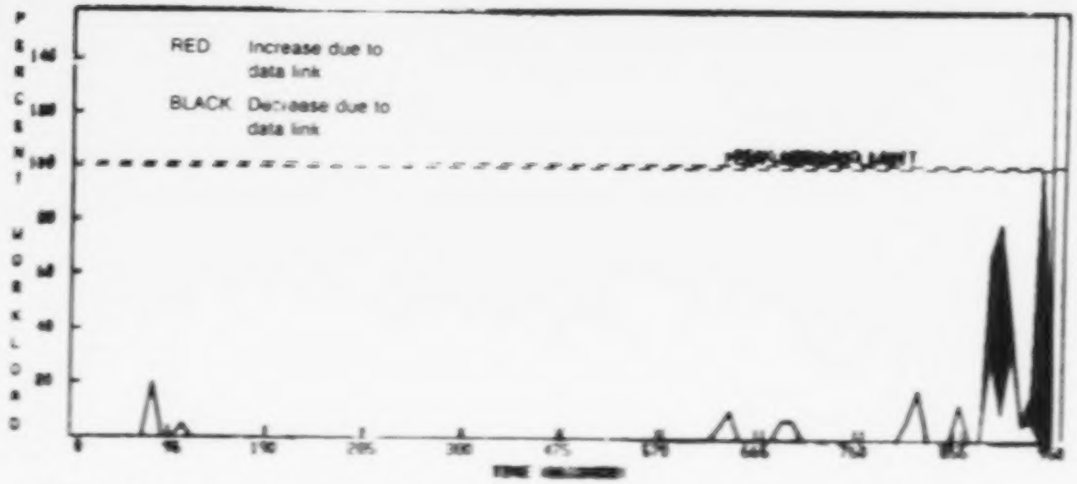


Figure C-46. Conventional Flight Deck, Pilot Tasking, Verbal Channel ILS Missed Approach With Reroute

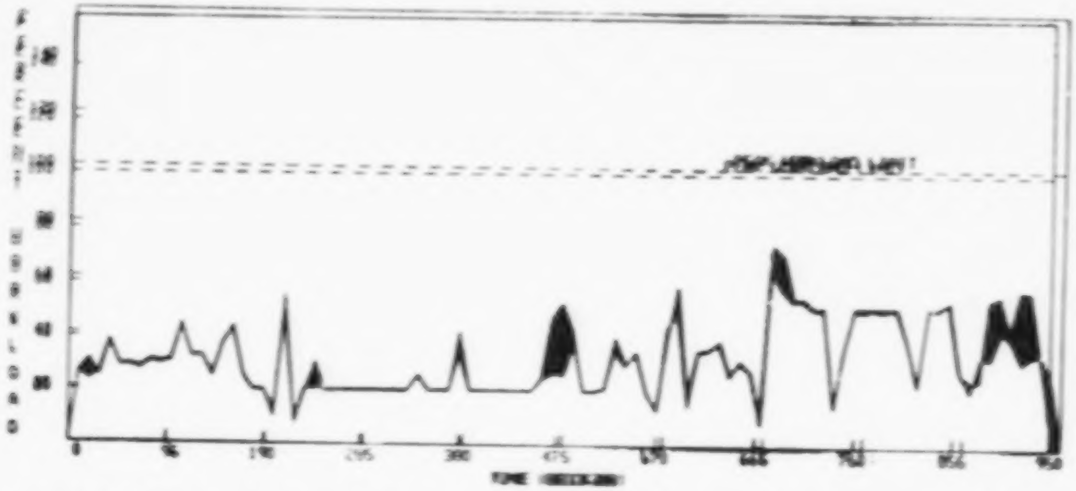


Figure C-47. Conventional Flight Deck, Pilot Tasking, Weighted Channel Average ILS Missed Approach With Reroute

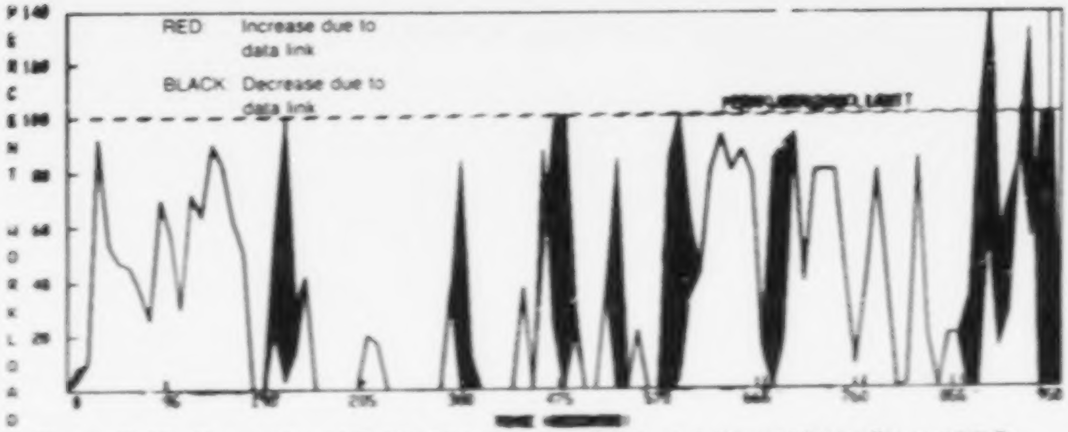


Figure C-48. Conventional Flight Deck, Copilot Tasking, Internal Vision Channel ILS Missed Approach With Reroute

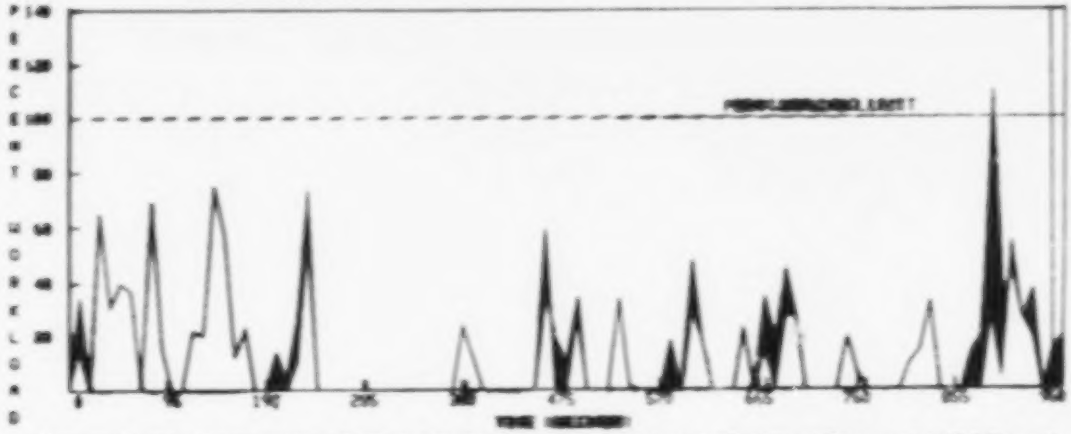


Figure C-49. Conventional Flight Deck, Copilot Tasking, Left Hand Channel ILS Missed Approach With Reroute

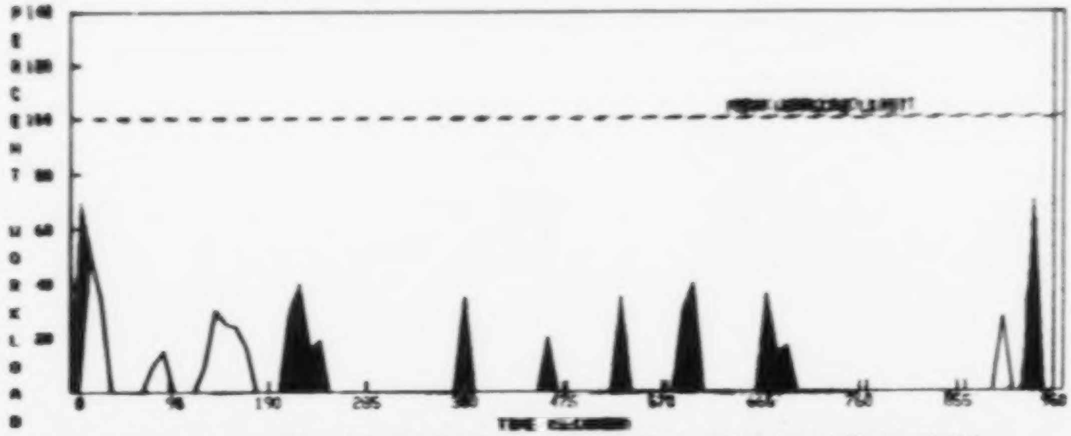


Figure C-50. Conventional Flight Deck, Copilot Tasking, Right Hand Channel ILS Missed Approach With Reroute

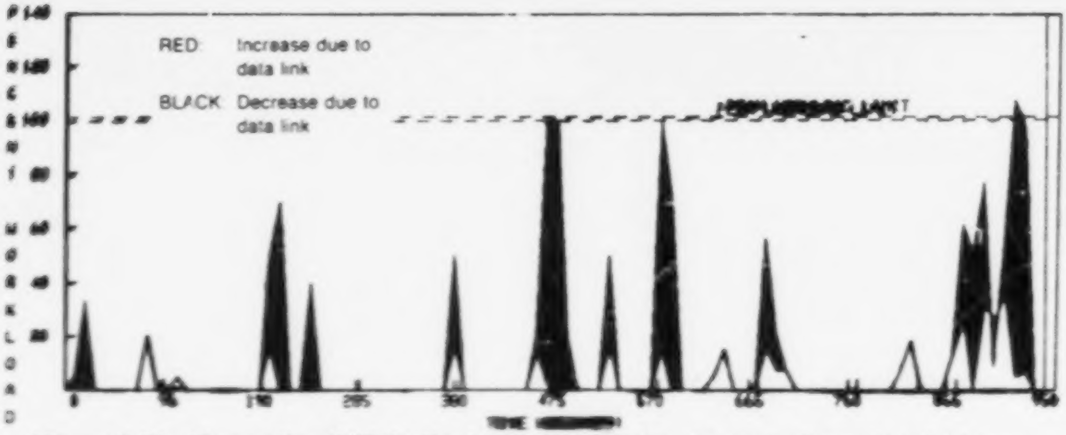


Figure C-51. Conventional Flight Deck, Copilot Tasking, Auditory Channel ILS Missed Approach With Reroute

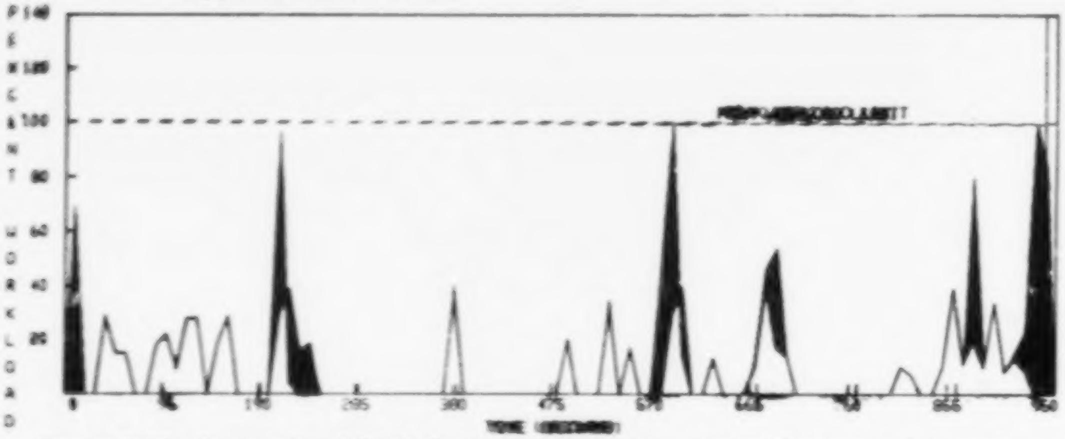


Figure C-52. Conventional Flight Deck, Copilot Tasking, Verbal Channel ILS Missed Approach With Reroute

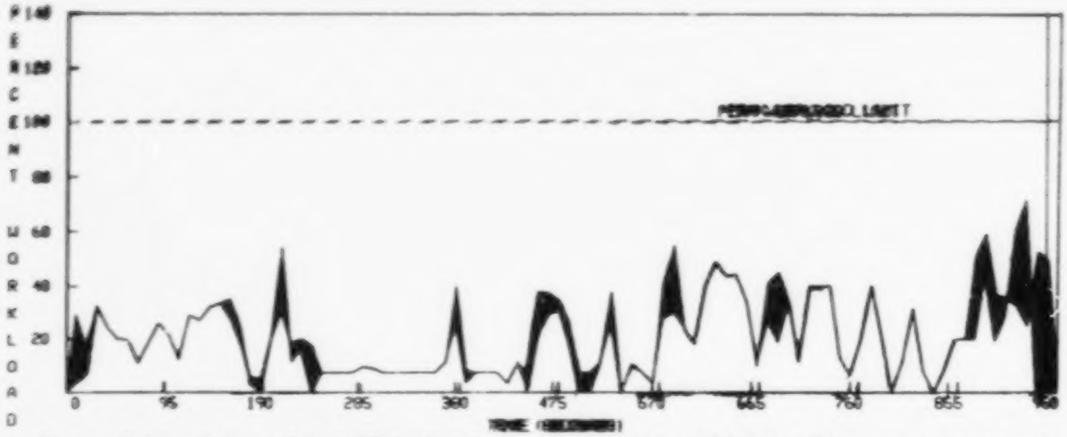


Figure C-53. Conventional Flight Deck, Copilot Tasking, Weighted Channel Average ILS Missed Approach With Reroute

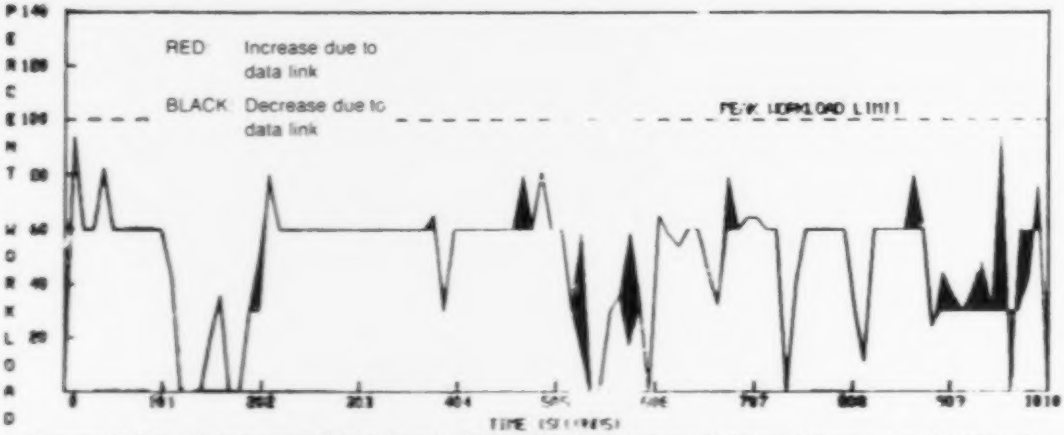


Figure C-54. Advanced Flight Deck, Pilot Tasking, Internal Vision Channel ILS Missed Approach With Reroute

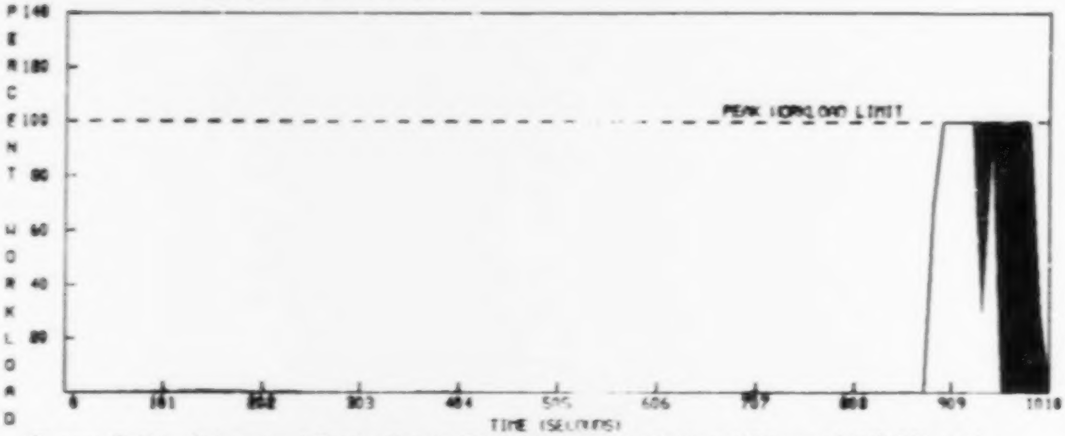
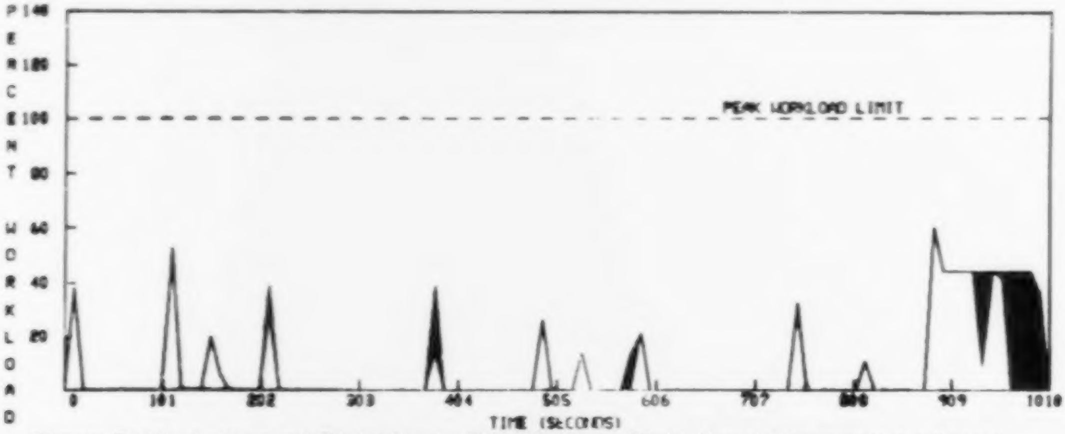


Figure C-55. Advanced Flight Deck, Pilot Tasking, Left Hand Channel ILS Missed Approach With Reroute



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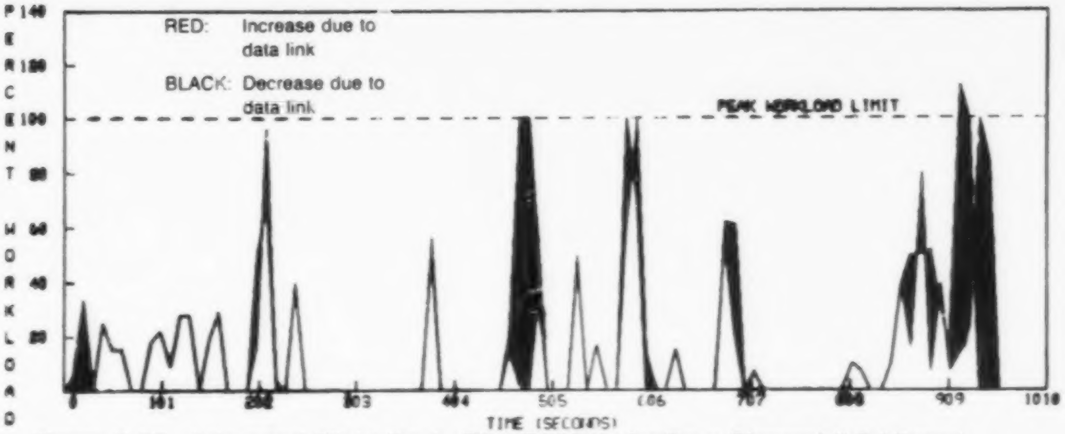

Figure C-57. Advanced Flight Deck, Pilot Tasking, Auditory Channel ILS Missed Approach With Reroute

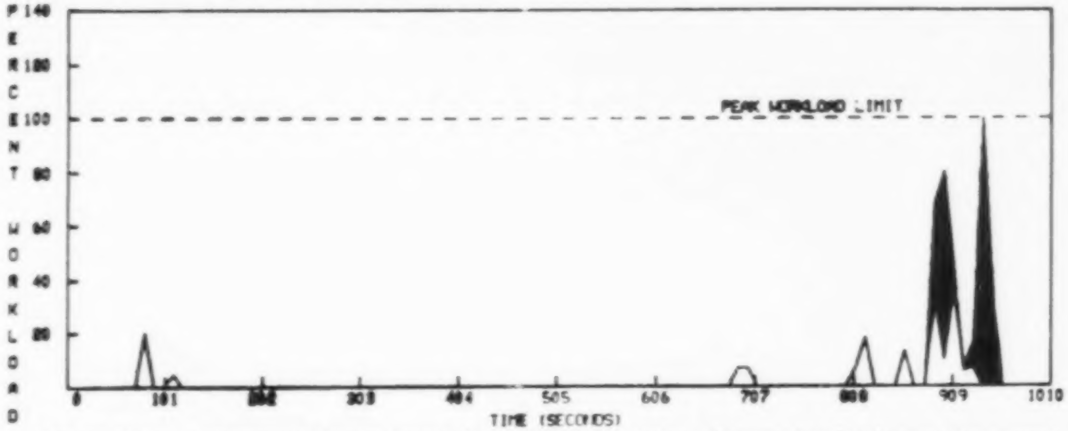

Figure C-58. Advanced Flight Deck, Pilot Tasking, Verbal Channel ILS Missed Approach With Reroute

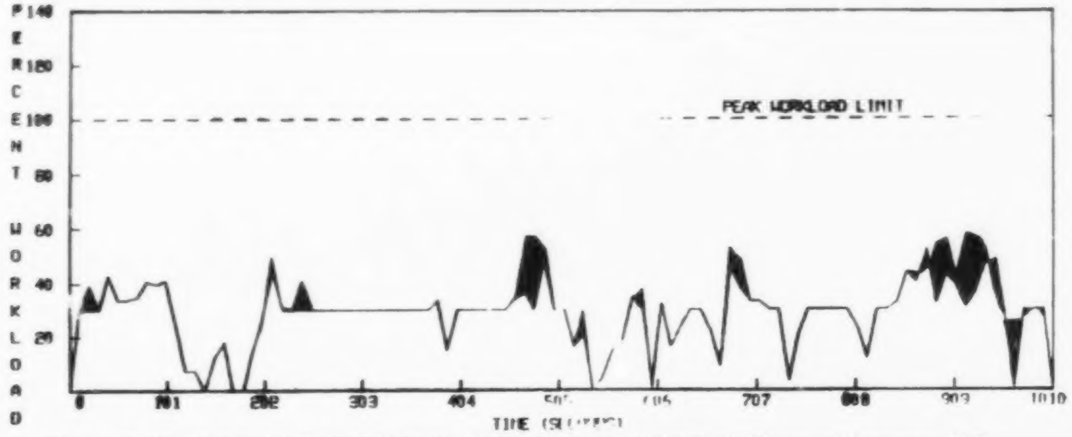

Figure C-59. Advanced Flight Deck, Pilot Tasking, Weighted Channel Average ILS Missed Approach With Reroute

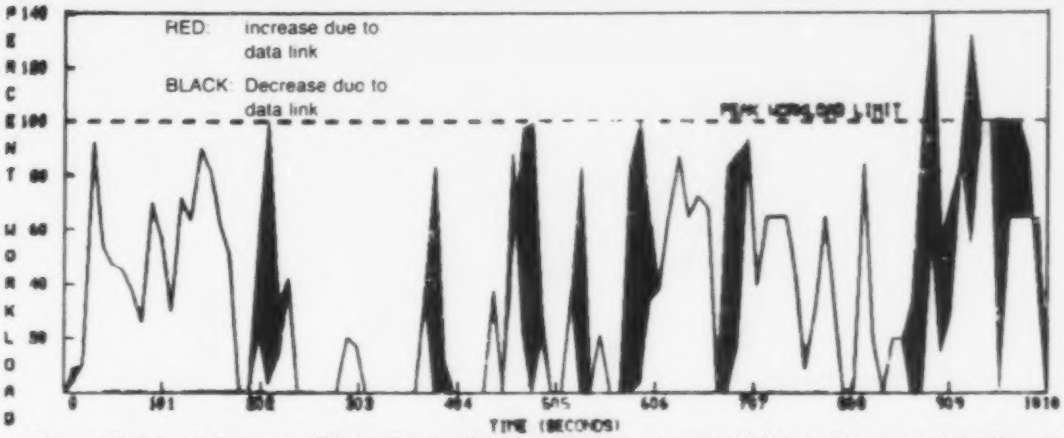

Figure C-60. Advanced Flight Deck, Copilot Tasking, Internal Vision Channel ILS Missed Approach With Reroute

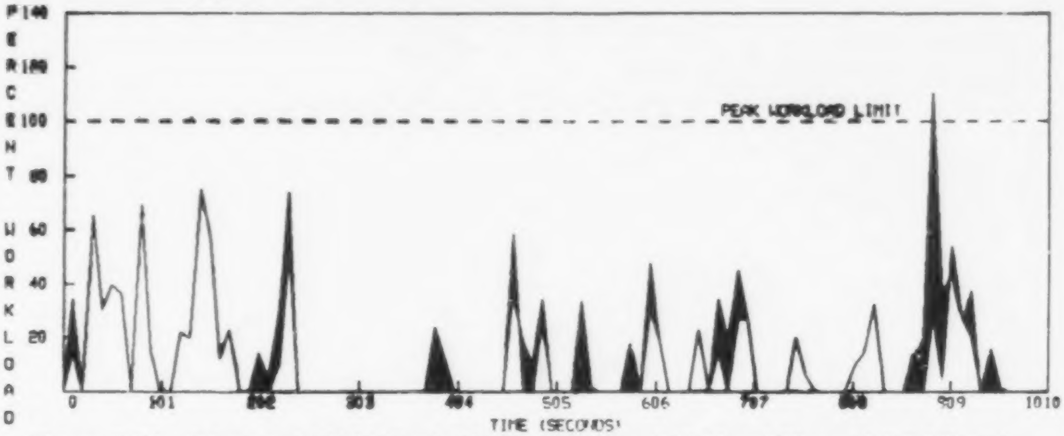

Figure C-61. Advanced Flight Deck, Copilot Tasking, Left Hand Channel ILS Missed Approach With Reroute

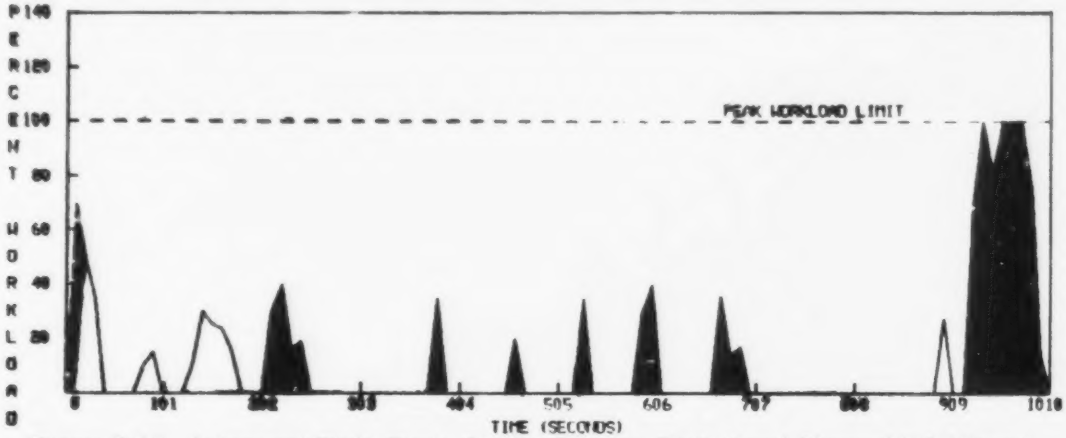

Figure C-62. Advanced Flight Deck, Copilot Tasking, Right Hand Channel ILS Missed Approach With Reroute

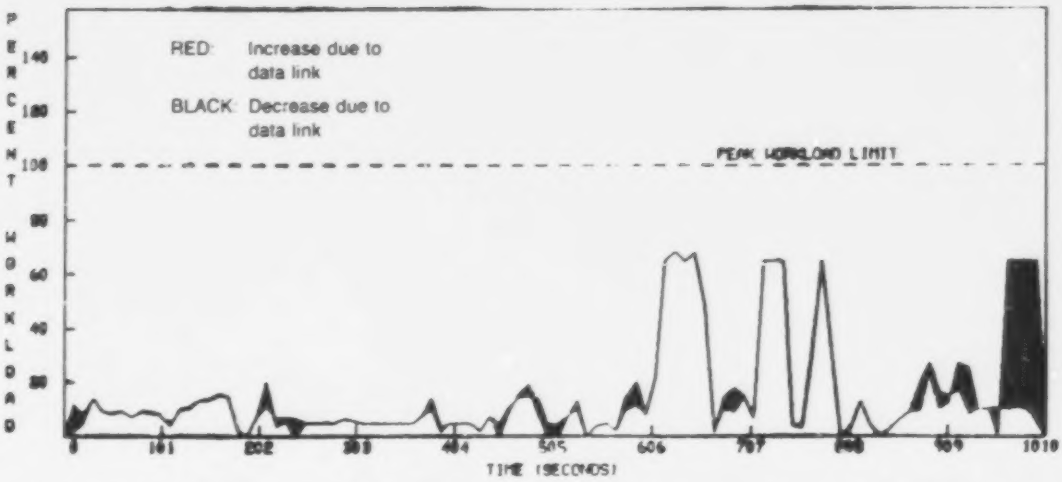

Figure C-63. Advanced Flight Deck, Copilot Tasking, Cognitive Channel ILS Missed Approach With Reroute

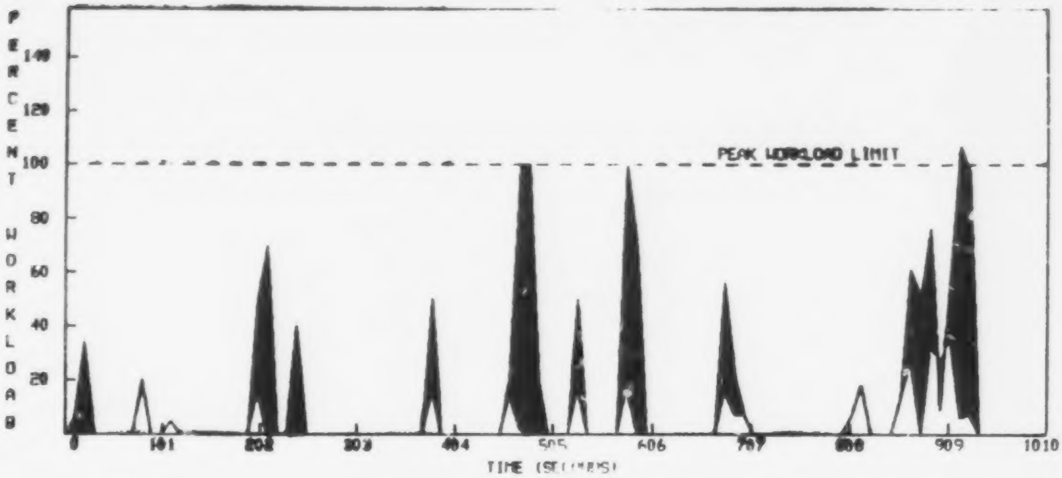

Figure C-64. Advanced Flight Deck, Copilot Tasking, Auditory Channel ILS Missed Approach With Reroute

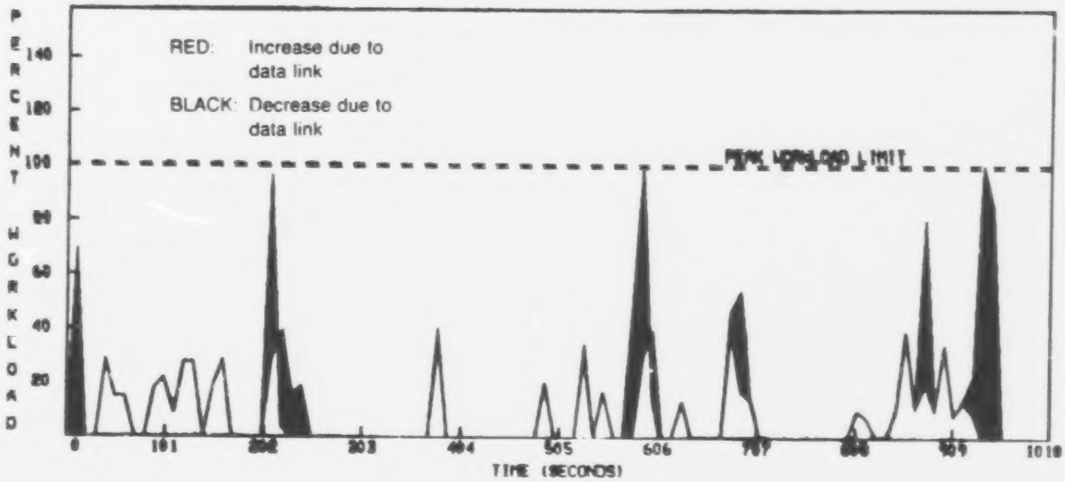

Figure C-65. Advanced Flight Deck, Copilot Tasking, Verbal Channel ILS Missed Approach With Reroute

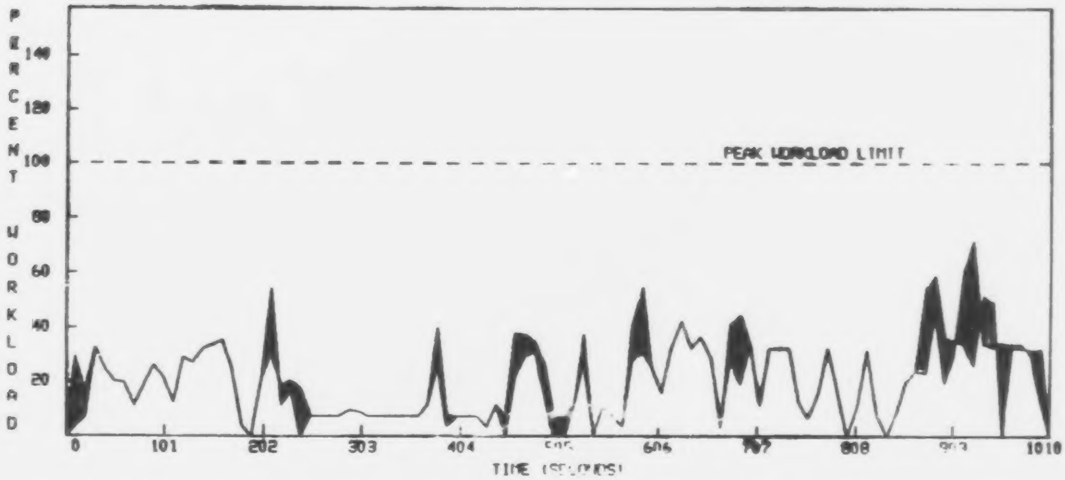

Figure C-66. Advanced Flight Deck, Copilot Tasking, Weighted Channel Average ILS Missed Approach With Reroute

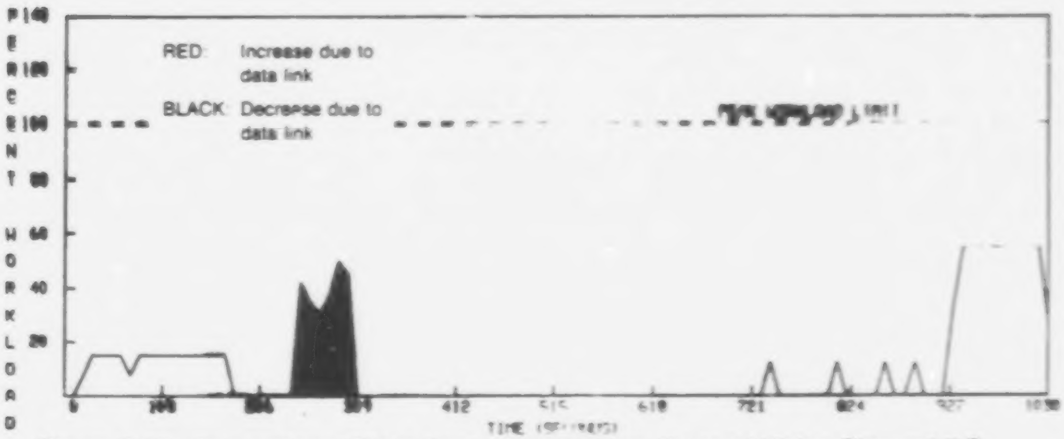

Figure C-67. Conventional Flight Deck, Pilot Tasking, External Vision Channel ILS Approach With TCAS Encounter

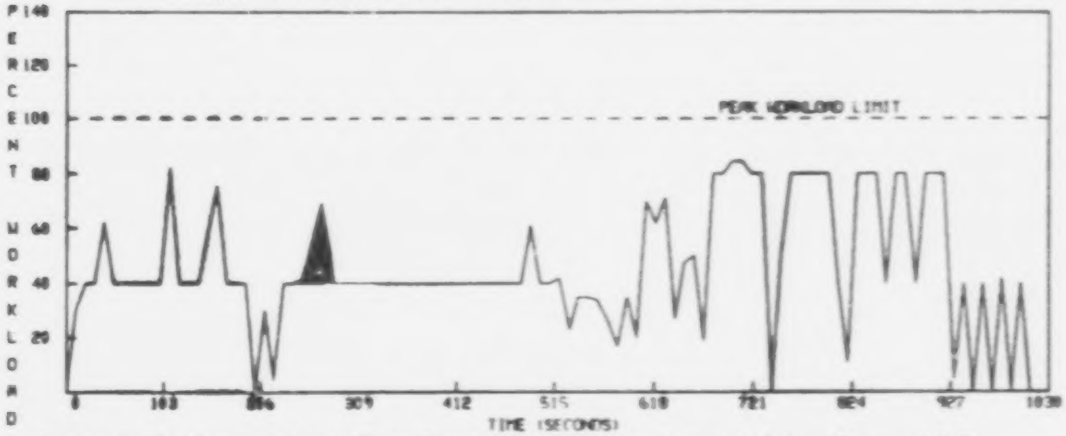

Figure C-68. Conventional Flight Deck, Pilot Tasking, Internal Vision Channel ILS Approach With TCAS Encounter

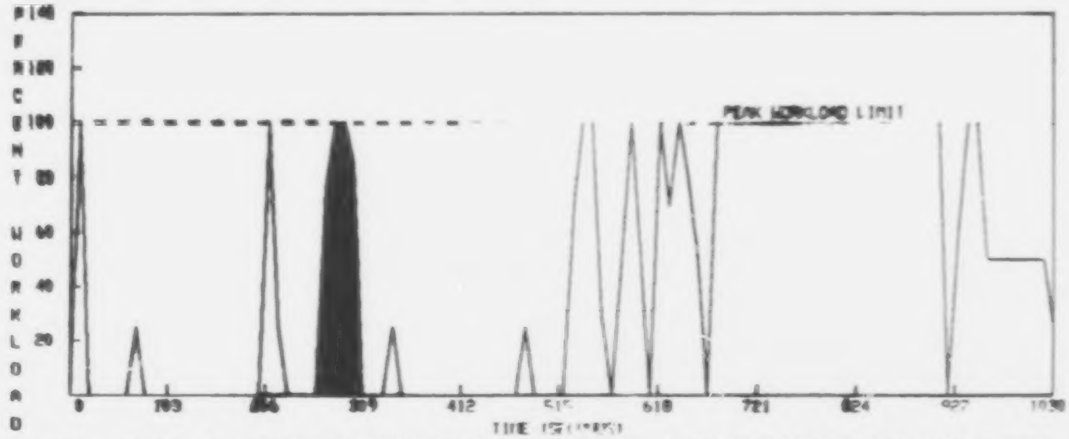

Figure C-69. Conventional Flight Deck, Pilot Tasking, Left Hand Channel ILS Approach With TCAS Encounter

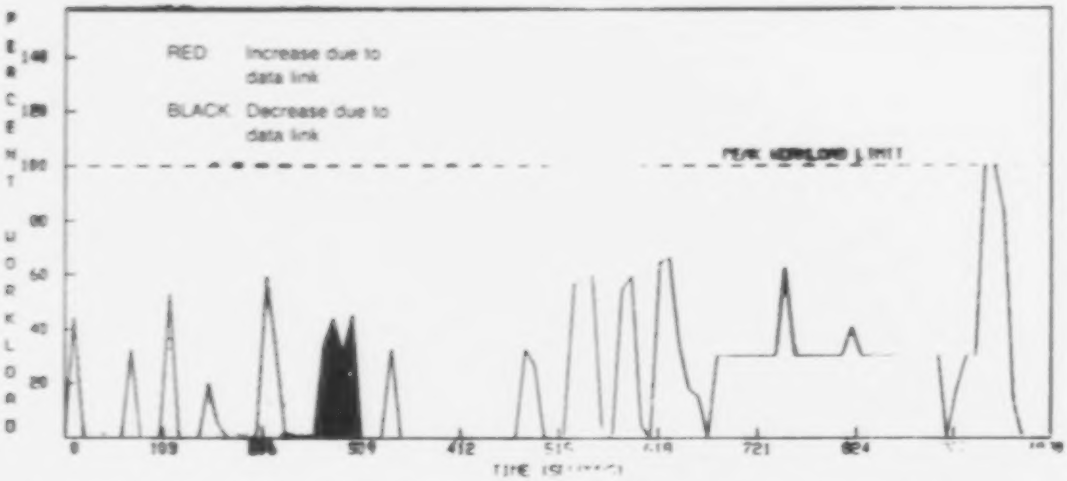

Figure C-70. Conventional Flight Deck, Pilot Tasking, Right Hand Channel ILS Approach With TCAS Encounter

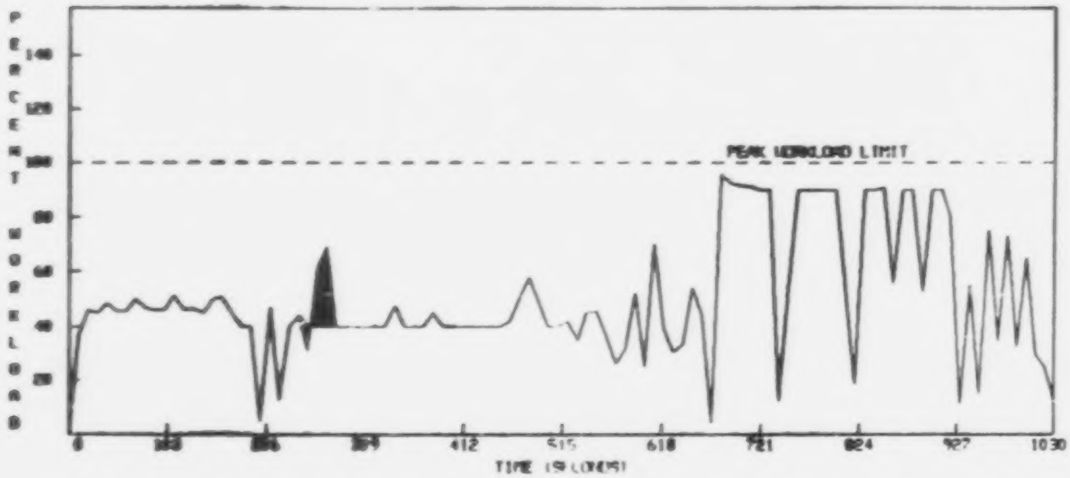

Figure C-71. Conventional Flight Deck, Pilot Tasking, Cognitive Channel ILS Approach With TCAS Encounter

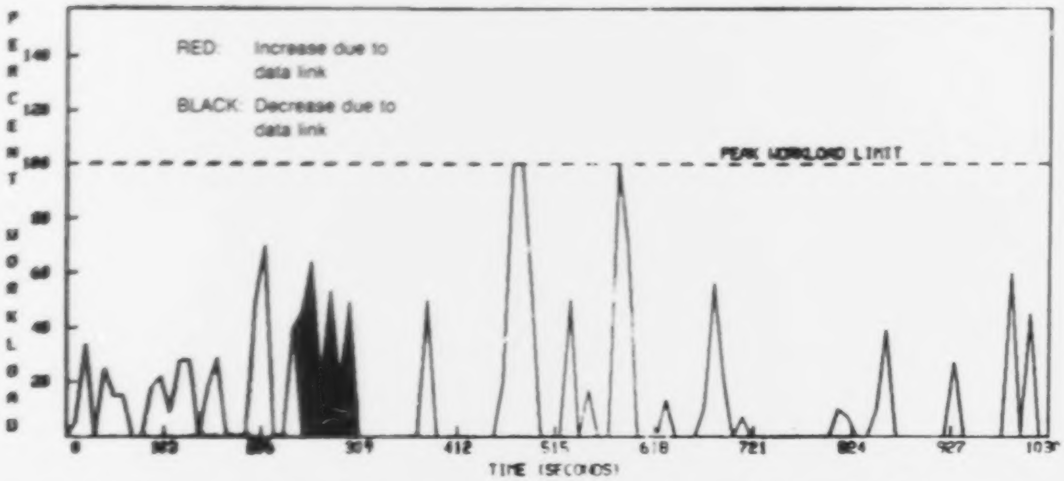

Figure C-72. Conventional Flight Deck, Pilot Tasking, Auditory Channel ILS Approach With TCAS Encounter

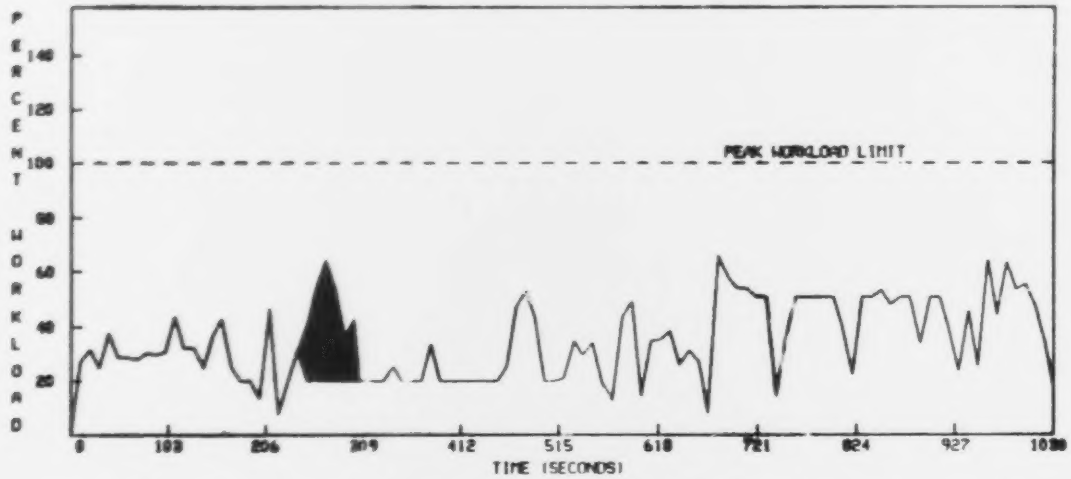

Figure C-73. Conventional Flight Deck, Pilot Tasking, Weighted Channel Average ILS Approach With TCAS Encounter

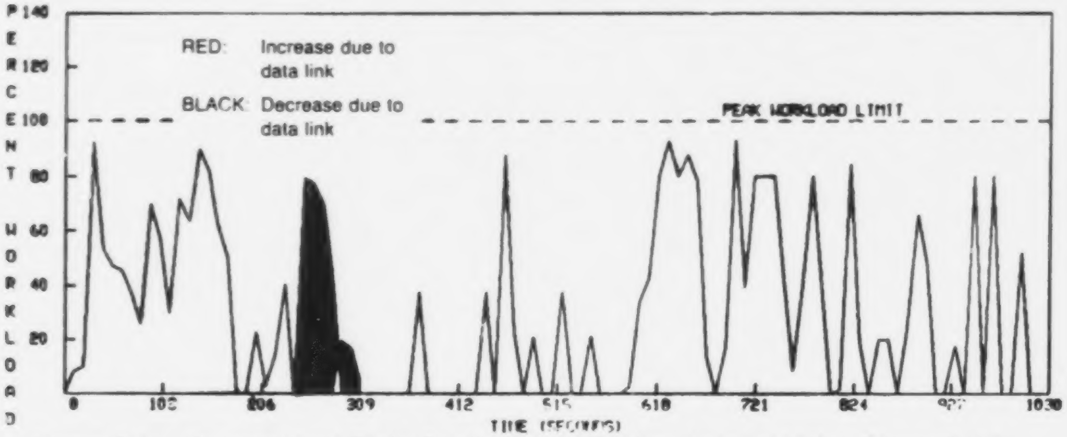

Figure C-74. Conventional Flight Deck, Copilot Tasking, Internal Vision Channel ILS Approach With TCAS Encounter

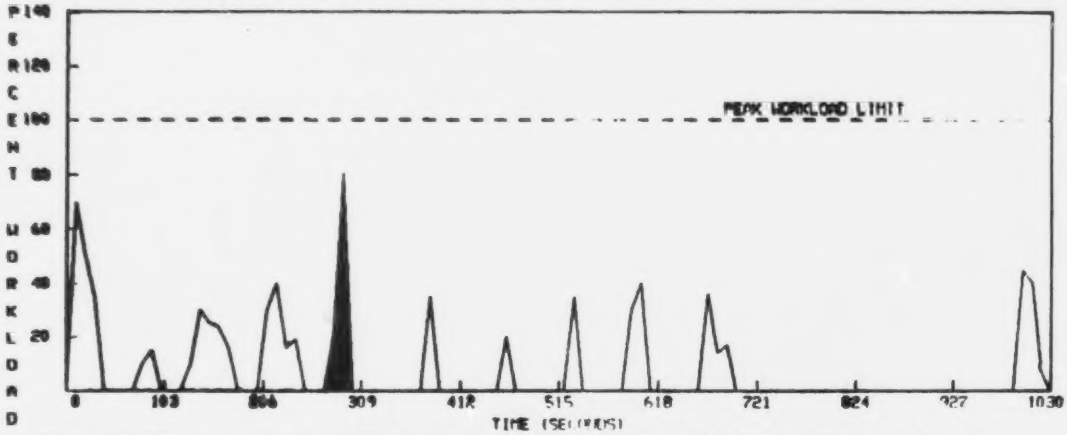

Figure C-75. Conventional Flight Deck, Copilot Tasking, Right Hand Channel ILS Approach With TCAS Encounter

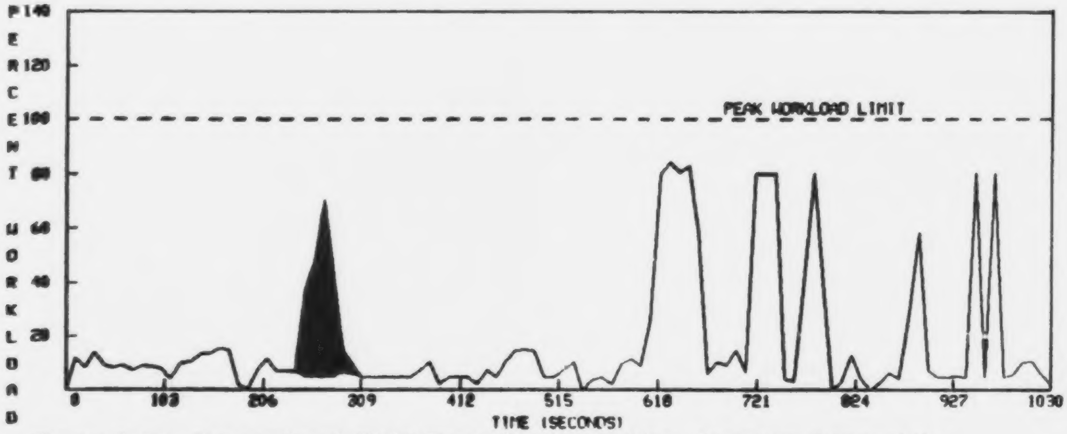

Figure C-76. Conventional Flight Deck, Copilot Tasking, Cognitive Channel ILS Approach With TCAS Encounter

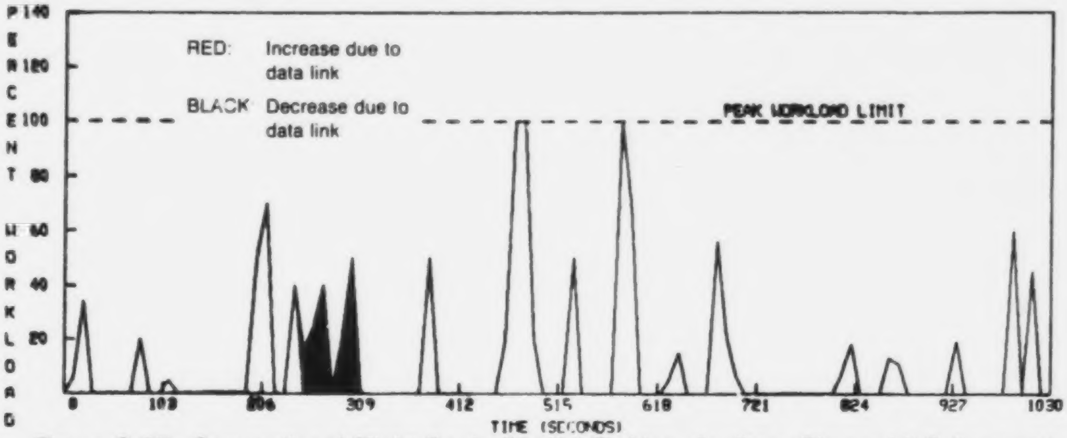

Figure C-77. Conventional Flight Deck, Copilot Tasking, Auditory Channel ILS Approach With TCAS Encounter

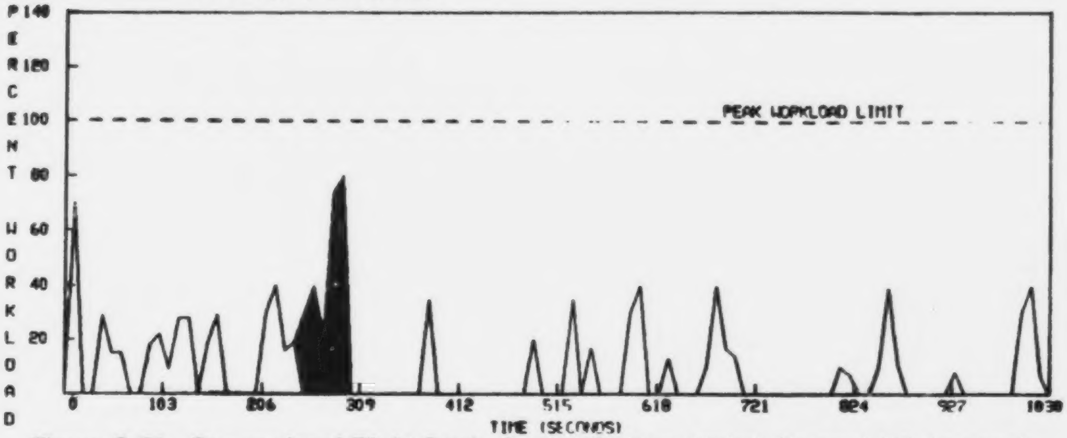

Figure C-78. Conventional Flight Deck, Copilot Tasking, Verbal Channel ILS Approach With TCAS Encounter

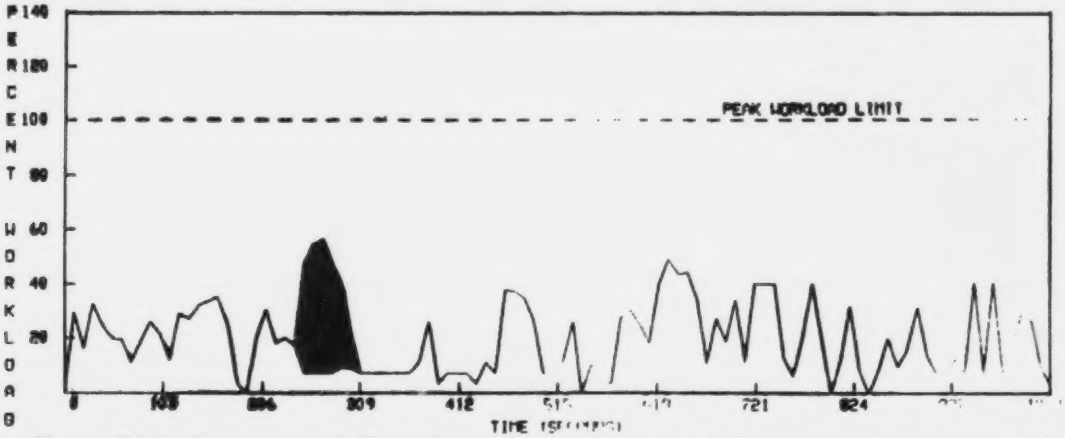

Figure C-79. Conventional Flight Deck, Copilot Tasking, Weighted Channel Average ILS Approach With TCAS Encounter

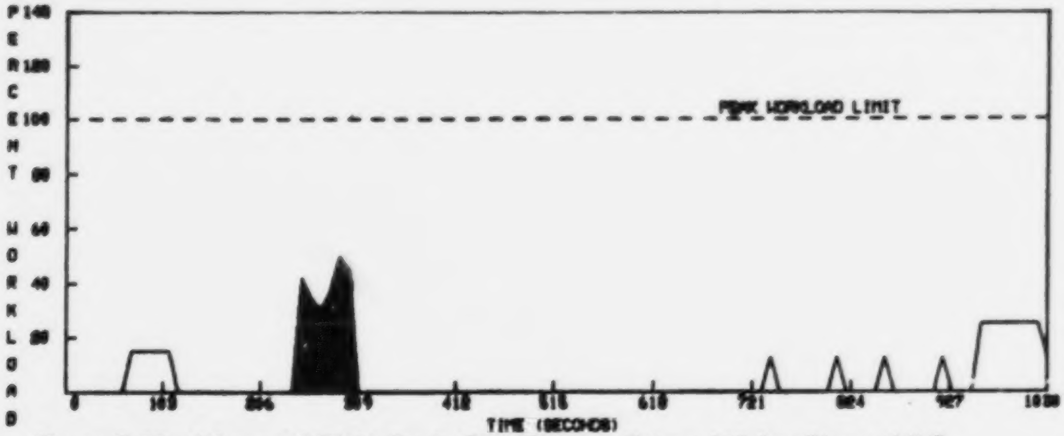

Figure C-80. Advanced Flight Deck, Pilot Tasking, External Vision Channel ILS Approach With TCAS Encounter

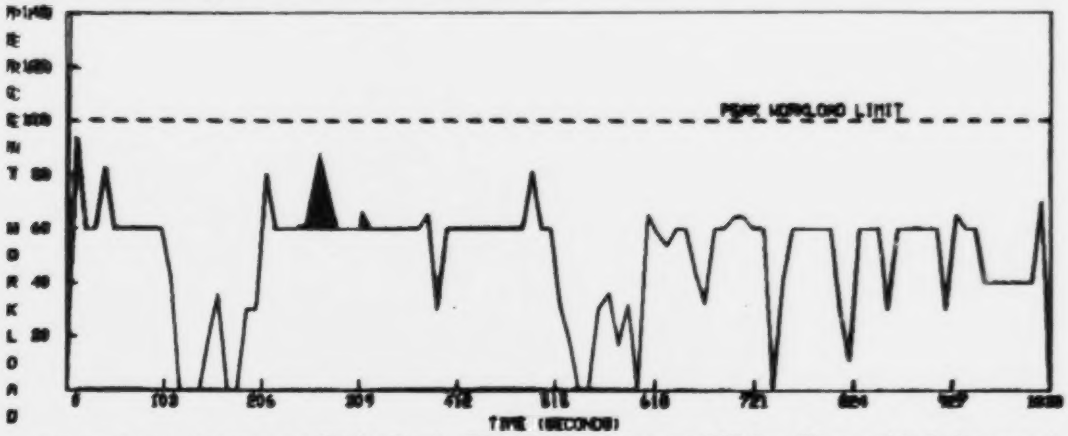

Figure C-81. Advanced Flight Deck, Pilot Tasking, Internal Vision Channel ILS Approach With TCAS Encounter

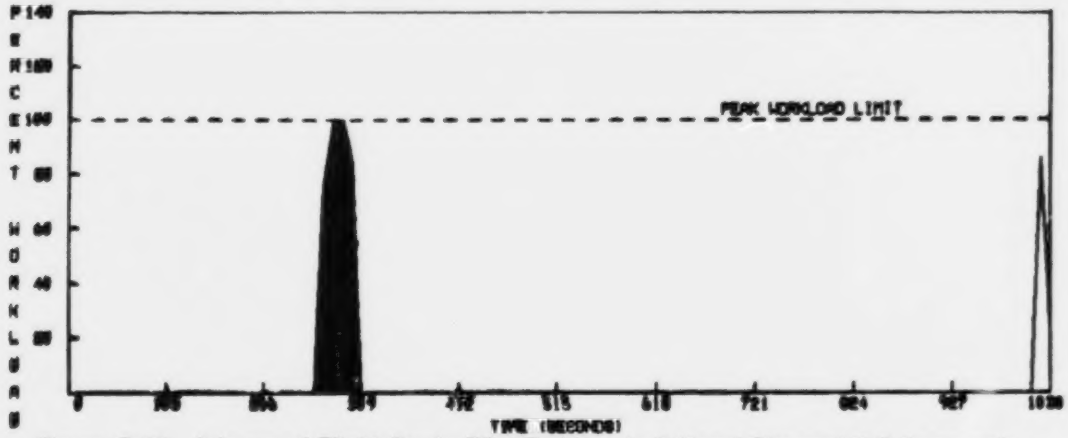

Figure C-82. Advanced Flight Deck, Pilot Tasking, Left Hand Channel ILS Approach With TCAS Encounter

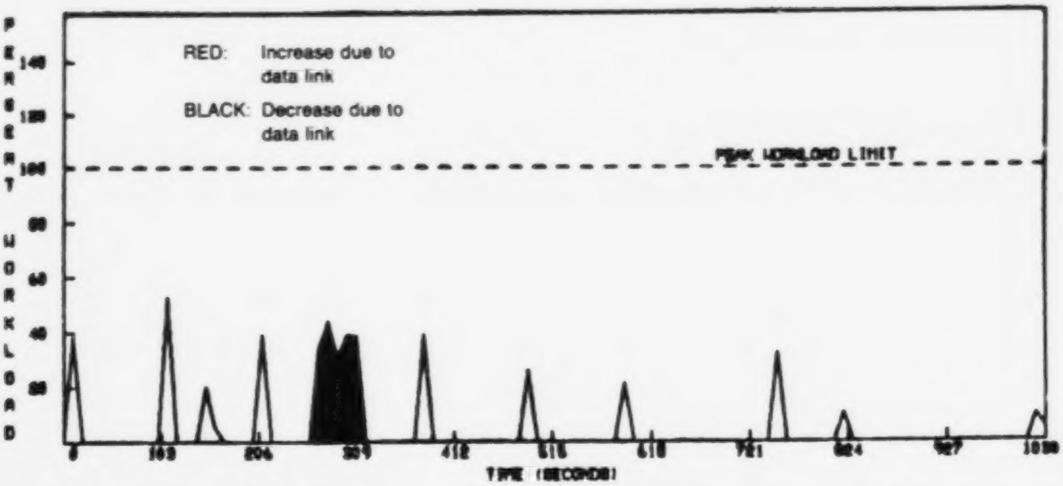

Figure C-83. Advanced Flight Deck, Pilot Tasking. Right Hand Channel ILS Approach With TCAS Encounter

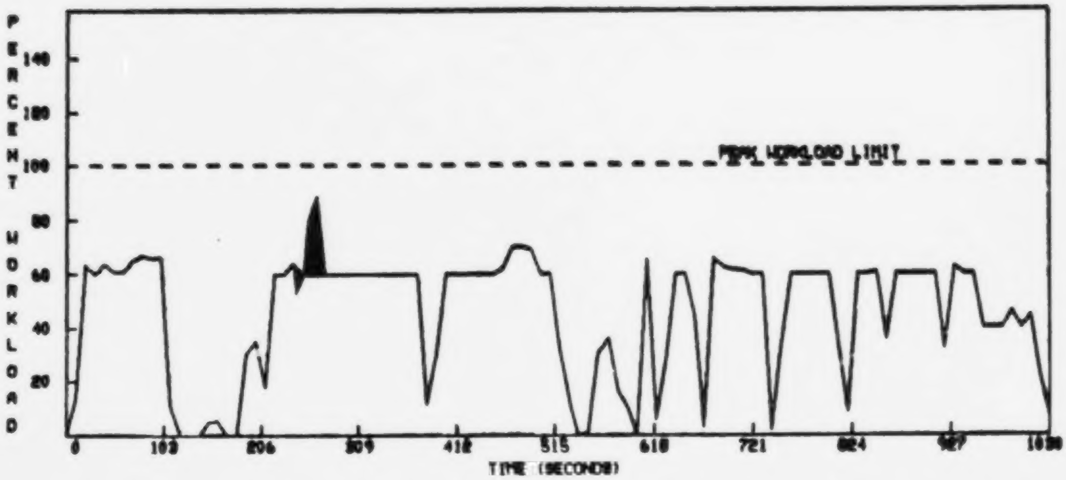

Figure C-84. Advanced Flight Deck, Pilot Tasking, Cognitive Channel ILS Approach With TCAS Encounter

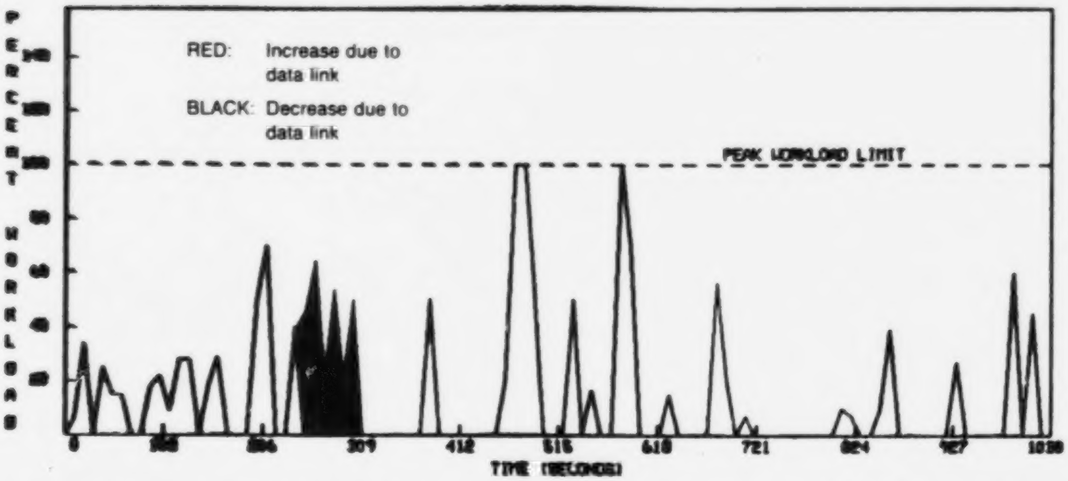

Figure C-85. Advanced Flight Deck, Pilot Tasking, Auditory Channel ILS Approach With TCAS Encounter

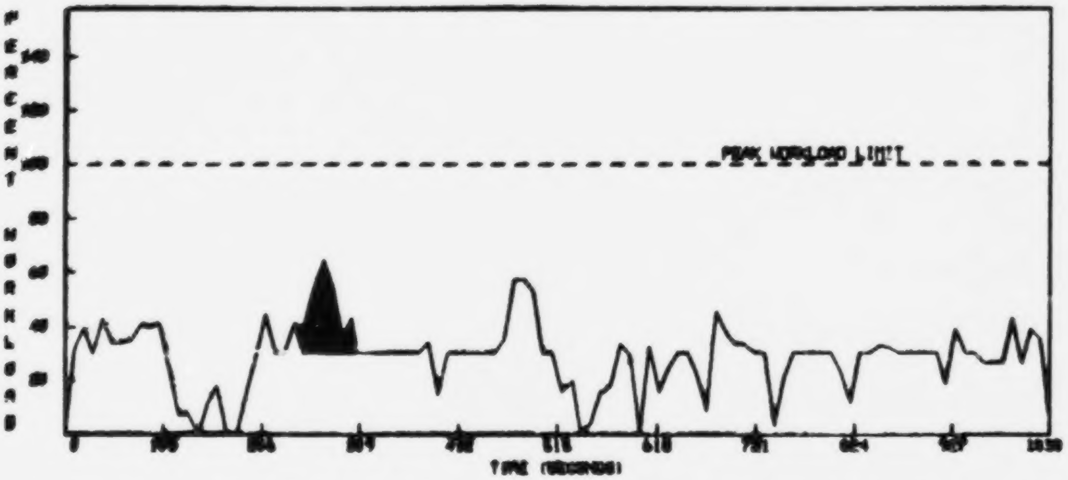

Figure C-86. Advanced Flight Deck, Pilot Tasking, Weighted Channel Average ILS Approach With TCAS Encounter

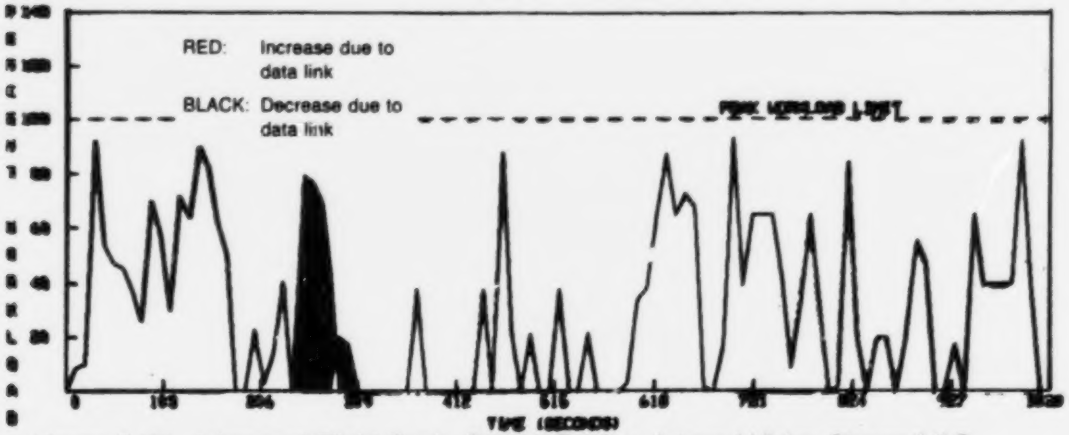

Figure C-87. Advanced Flight Deck, Copilot Tasking, Internal Vision Cnannel ILS Approach With TCAS Encounter

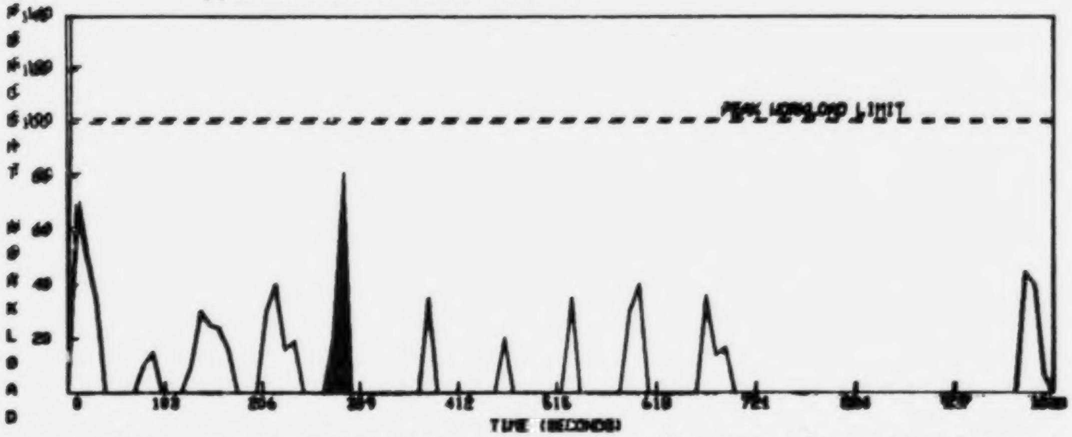

Figure C-88. Advanced Flight Deck, Copilot Tasking, Right Hand Channel ILS Approach With TCAS Encounter

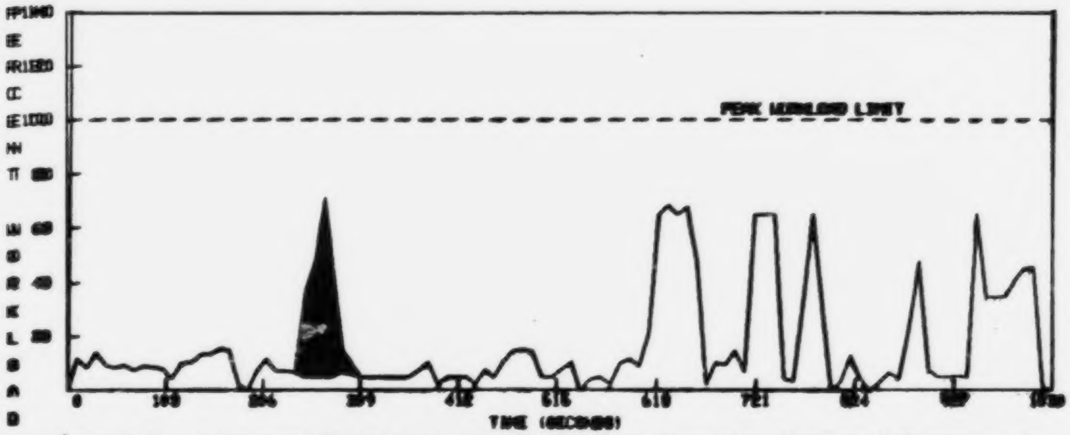

Figure C-89. Advanced Flight Deck, Copilot Tasking, Cognitive Channel ILS Approach With TCAS Encounter

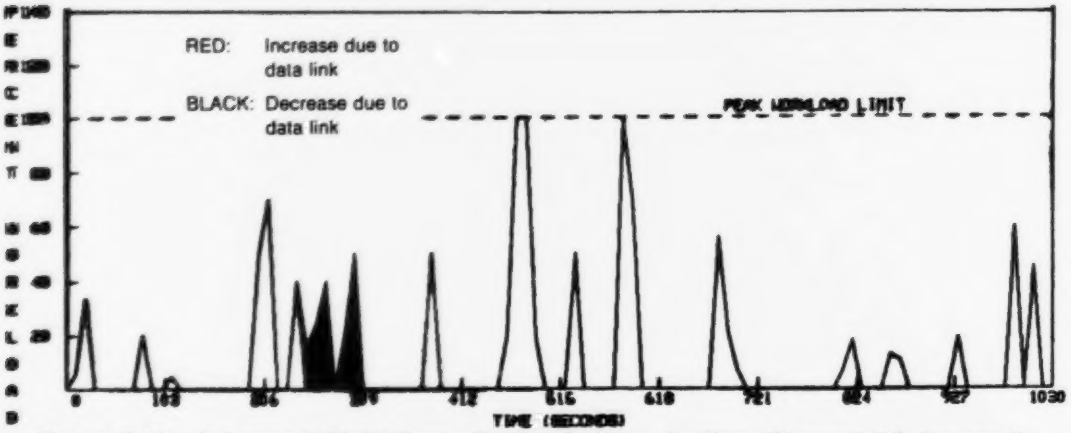

Figure C-90. Advanced Flight Deck, Copilot Tasking, Auditory Channel ILS Approach With TCAS Encounter

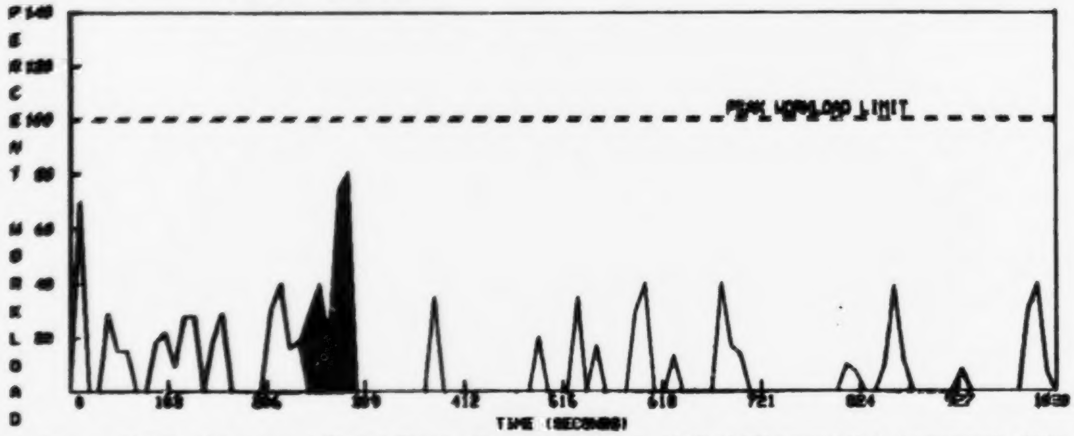

Figure C-91. Advanced Flight Deck, Copilot Tasking, Verbal Channel ILS Approach With TCAS Encounter

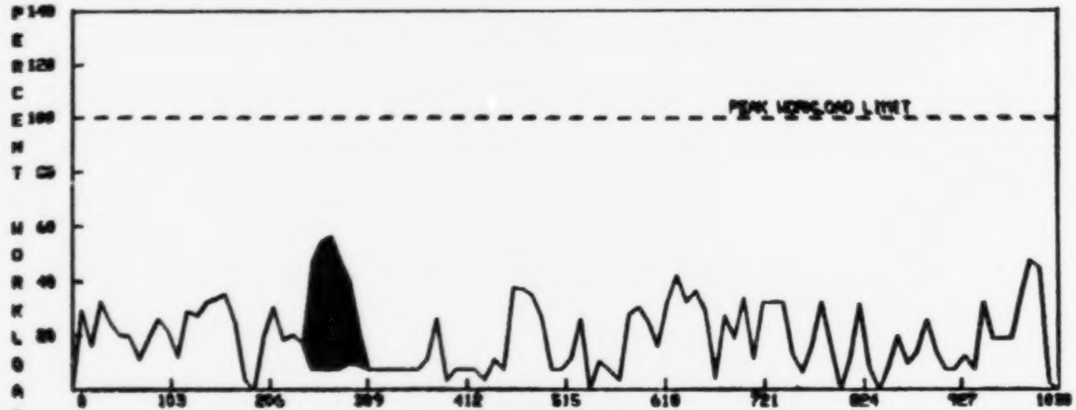

Figure C-92. Advanced Flight Deck, Copilot Tasking, Weighted Channel Average ILS Approach With TCAS Encounter